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ORIGINAL ARTICLES.

DISAPPEARANCE OF YELLOW FEVER FROM HAVANA, CUBA.*

BY W. C. GORGAS, M.D.,
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BEFORE describing the work in Havana, it would be well to run lightly over the history of yellow fever and point out some of its prominent characteristics.

It is an acute disease of a week or ten days duration, characterized by fever, and the prominent symptoms of black vomit and jaundice, from both of which symptoms it is named, by the Spaniards "vomito negro," and in the English language, generally yellow fever. Neither of these symptoms, however, are invariable.

The peculiarity of its habitat has always been remarked upon since anything has been known about the disease. It has been principally confined to the coast of the Gulf of Mexico, though frequently spreading to the Atlantic coast of the United States and of South America, and at times, to the Pacific coast, for a short distance above and below the equator, on the west coast of Africa, and very extensively in Southern Europe. It has never been transmitted to the dense populations of India or China.

This limited spread of yellow fever attracted a great deal of attention and was very difficult to explain. The mosquito theory, however, gives a good explanation of it, China and India heretofore having been too far away for an infected mosquito to be transported to them, or for the disease to get there in man, in such a condition as to infect the mosquitoes of those countries. The disease not being carried as fomites by clothing and merchandise, cannot be carried any farther than the time that can be covered in travel by the life of an infected *Stegomyia*, or that period during which the disease would last in man. The introduction of steam and the passage through the Suez Canal, it seems to me, makes it now possible for the disease to be transmitted to Asia, if circumstances were favorable. But the probabilities are very small. It would be possible in case of a ship becoming infected at Rio or Vera Cruz and going direct via the Suez Canal to some Asiatic port, but the necessities of trade very seldom require this. It is also probable that the *Stegomyia* is not an inhabitant of those countries, though that would not at all be a bar to the spread of the disease. It is quite possible for an infected female mosquito to be introduced to a locality where the stegomyia did not exist, but where the conditions were favorable for her development, lay her eggs, and at the same time, it may be, infect a human being; the eggs would hatch and produce their species, the man would develop yellow fever, and thus the epidemic spread. This is, probably, the explanation of epidemics in Boston and Quebec, where I understand the stegomyia is not native. An infected stegomyia is introduced in the summer when the conditions are favorable; in the old times, probably, before the introduction of a general water supply every house had its own receptacle for water, and when the stegomyia was introduced on a ship during the summer, generally found everything favorable for propagation,—temperature, water supply and all. This peculiarity,—the limited habitat of yellow fever,—could not be satisfactorily accounted for on the theory of fomites, but it is very easily explained on the theory of the mosquito as being the intermediary host. There is no reason why, for instance, if yellow fever were conveyed by clothing as fomites it should not have been more frequently conveyed to Spain, with ships and steamers running from Havana every week, always carrying many soldiers right from the military hospital, who took all their clothing with them, without an attempt at disinfection.

Another marked peculiarity of the disease with regard to habitat was that it was sharply limited by increase of latitude north and south from the equator; another, that it always declined and disappeared on the appearance of frost; another, that it was in general a disease of low altitudes and did not spread in the highlands and mountains. These peculiarities were entirely inexplicable on the theory of fomites, but are easily accounted for now that we know it to be a mosquito borne disease. There is no reason, if yellow fever is simply conveyed by fomites, why it should not spread in high latitudes, as well as near the equator, just as smallpox and tuberculosis do. Or even if the germ were killed by cold, there is always plenty of opportunity about the habitations of man for sufficient warmth for its development, if that were all that is necessary. But the stegomyia is stopped by frost; he can not survive any number of winters in latitudes subject to frost, and at once becomes torpid and hibernates when the temperature falls to the freezing point.

The history of yellow fever between Vera Cruz and the City of Mexico is a very good example of the effect of altitude. Yellow fever is frequently epidemic at Vera Cruz, for many years in succession. This city is connected with the City of Mexico by a railroad line, and has with it the most intimate business association. Vera Cruz is really the sea-port of the City of Mexico; all sorts of fabrics which have been exposed to yellow fever during epidemic seasons are daily carried to the City of Mexico. Yet there has been no spread of yellow fever in that city. There have been instances of persons non-immune contracting the disease in Vera Cruz and developing it in the City of Mexico, but never an instance of a case contracted in the City of Mexico. This could not be explained under the theory of its transmission by fomites, but readily, if it could be shown, as is probably the case, that the stegomyia cannot live in the altitude of the City of Mexico.

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* Read before the New York Academy of Medicine, Nov., 1902.

Yellow fever was known to the Mexicans before the arrival of the whites on this continent. We have records showing that Montezuma, not very long before the arrival of Cortez, had given land and other inducements, to 8,000 families to come from the interior and settle in the neighborhood of Vera Cruz, in order that the losses that had been caused by an epidemic of what appears to have been yellow fever might be made good; and evidently this had occurred more than once. While the record of the symptoms of disease are not sufficiently complete at the time of the discovery of Mexico for us to be able certainly to recognize yellow fever from the description, we can feel reasonably sure that many of the epidemics which affected the explorers at this time were yellow fever. As commercial relations became intimate, the disease spread more widely, until about the latter part of the eighteenth century and the beginning of the nineteenth it looked as if it were going to become the scourge of Europe and North America, and possibly of the whole world. Since that time it has gradually declined, and is at present confined to very narrow limits within the tropics. Now that we know the history of the disease, and that it is only propagated by a single species of mosquito as the intermediary host, this spread and decline can be very readily acounted for.

Yellow fever, as it has affected various localities, has been either epidemic or endemic; epidemic when it appeared at a place, affecting it one season, or a succession of seasons, and then entirely disappearing for a number of years; endemic when it was a constant factor of mortality in a locality, affecting it more or less every year and ever month.

To understand this, let us consider for a moment the course of the disease in the mosquito and in man, as far as we know it. It is evidently a parasitic disease of the stegomyia mosquito which lasts during the whole life of the insect, without apparently having any serious effect upon its general health, and it can be conveyed to the non-immune man at any time during the life of the mosquito. As the insect uses blood only in some relation to ovulation, the female is the only sex that bites, and is therefore capable of conveying the disease. As far as our knowledge goes now, the mosquito introduces its parasite from the salivary glands, as it does the malaria plasmodium. After this introduction, it takes from two to five days incubation in the non-immune man to develop the disease, and in man, judging from the data that we at present have, the disease can only be transmitted to the mosquito within the first three days after its development.

From these facts in the life cycle of the yellow fever parasite, there are many conditions which would stop the spread of yellow fever. In the first place, if the *Stegomyia* could be destroyed in any epidemic or endemic locality, the disease would necessarily stop. Or if non-immune men could be gotten rid of, it would stop the disease with equal certainty; or if the infected mosquitoes could be prevented from biting non-immune men, the same condition would be reached. Or if where there are no infected mosquitoes the non-infected stegomyia could be prevented from biting the infected man within the first three days of his disease, the same result would be accomplished. Or if in any locality the infected *Stegomyia* could be gotten rid of, even if the species still continued to exist, yellow fever would cease; or again, in case the supply of non-immunes should become exhausted, the disease would likewise cease. All these conditions have existed, in fact, either singly or in combination, and their disappearance or concurrence have caused the disease either to permanently disappear, appear epidemically, or become endemic.

Take the temperate regions of North America, Philadelphia, for instance; in the pre-Columbian days, the Indians in that locality probably never had yellow fever, from the fact that there was no communication with the infected area of the West Indies, and no means of infecting stegomyia. As it was settled by the whites and communication with the West Indies became more direct, the first epidemic occurred, during the latter part of the seventeenth century. It affected the whole population and was very severe. It was generally introduced from the West Indies. A sailing vessel in the West Indies tied up at the docks, would almost always get a good supply of stegomyia aboard. In going to an infected port, it would get one of its crew infected, who would introduce the disease on the vessel. On its way back to Philadelphia this man would develop the disease and infect numbers of the mosquitoes aboard. These mosquitoes would infect the other members of the crew, and some sailor from the vessel would develop the disease ashore, and then start the infection in the city. The disease finding a large non-immune population would spread in every direction, decreasing as the number of non-immunes decreased, and disappearing entirely when frost appeared, which always causes the *Stegomyia* to become sluggish and hibernate. If all the *Stegomyia* died during the winter, that was the last of the disease. If a few survived, the disease was continued, getting less and less severe as the number of non-immunes decreased. Philadelphia in her epidemics has illustrated both conditions. A good many of her epidemics lasted only one year, showing that the cold had killed all the infected stegomyia during the winter. But at one time in the latter part of the eighteenth century, she had yellow fever successively for twelve years or more. The improved sanitation and introduction of water has left in Philadelphia fewer places where the mosquito could breed, and modern quarantine has vastly decreased the number of times at which infection has been introduced, so that probably Philadelphia has now passed from the list of those localities liable to epidemics of yellow fever. But one hundred years ago it far exceeded any other one disease as a cause of mortality in Philadelphia, and looked as if it had become endemic there.

This is a fair example of the history of the disease in localities subject to frost. In such places even under the most favorable conditions, it can only become epidemic, because the cold of winter will necessarily, in the course of time, exterminate the intermediary host.

In the tropics, the disease may be either epidemic or endemic; the only examples of endemicity on this continent are Rio Janeiro and Havana. In some of the large towns, such as Vera Cruz, Santiago and others, the disease, as it did in Philadelphia, can recur for many years in succession, but all other places, except Rio and Havana, have presented a considerable succession of years when they were free from yellow fever, and the causes of this, when we come to think of it, are obvious. It falls under the second head. The human host becomes exhausted.

Take a small community of five or six thousand people in the tropics, with a population of four or five hundred non-immunes, the rest of the population having become immunes by former attacks of yellow fever. The infection of yellow fever is introduced and an epidemic starts among the non-immunes; a certain portion of them have the fever, which continues all during the summer. In the cooler weather of the winter the mosquitoes cease to bite, except under very favorable conditions, and the epidemic subsides, increasing again the following summer as mosquitoes become more active. These conditions continue for a greater or less number of years, until the non-immune material is exhausted, or the non-immunes become so few that the disease cannot propagate, and it therefore disappears until the number of non-immunes again increases, the infection is once more introduced, and the same process is repeated.

Probably no infected mosquito would survive, say, six months, and if he could be prevented during that time from biting a non-immune, the disease would disappear in that locality. I say six months, as we have no accurate data as to the extreme length of life in the mosquito. At Las Animas Hospital we have had a stegomyia mosquito live in captivity for 105 days, and it might well be that if his surroundings were as favorable as they are in a natural state, and if it were protected from its enemies, it might survive considerably longer. It can be readily understood that in a large population of immunes, a considerable number of non-immunes might be present without being able to keep yellow fever alive. Take, for example, a population of 20,000 people, in which there are 100 non-immunes scattered evenly about, and a few dozen infected mosquitoes. These mosquitoes as they bite at random would only stand one chance in two hundred of striking a non-immune, and thus the chances of their giving yellow fever would be very small. We thus see that in any small community, even in the tropics, the disease must necessarily be epidemic from the exhaustion of the non-immunes, and that it takes a considerable number of non-immunes added to the population yearly to keep up the disease. But in the two large centers, Havana and Rio Janeiro, the disease has become endemic, and is present every year and every month, and probably for many years there has not been a day when there was not some case in each of those cities. As far as we can find out from the records, this has been the condition in Havana since 1762, the year of the English occupation, and in Rio Janeiro since about 1850. And the reason why the disease does not die out in these cities is obvious. They are both ports of entry for their respective countries, and have large populations, Havana having 275,000, and Rio about 700,000, with a large foreign immigration constantly coming in. Havana since the American occupation has averaged over 17,000 non-immune immigrants every year. As most of these stay in Havana, they will be a constant source of renewing the disease. The infected mosquito before her death would find an opportunity for biting some non-immune, and he in his turn would infect some mosquitoes, and the constant stream of non-immunes coming in would always supply material for this interchange. The same thing has been taking place at Rio during the last half a century, on account of the large non-immune immigration. In no other tropical communities do these conditions exist. Vera Cruz, in Mexico, comes nearest to it, but Vera Cruz is a very much smaller city—40,000,—and while a large number of non-immune immigrants disembark at Vera Cruz, comparatively few remain in the city. And though yellow fever will frequently occur in Vera Cruz several years in succession, it will also be absent from the city for a considerable length of time.

At the time that Havana came under the control of the United States, yellow fever, as I have just said, had been endemic for over 130 years, the records showing that during that period the city had never at any time been free from the disease.

The following table, compiled from the official records, from the year 1856 up to the present date, shows that often over 1,000 people died in a year of yellow fever, and seldom less than 500:

possible, yellow fever from Havana. A Sanitary Department was at once organized and sanitary measures vigorously pushed. These measures were very successful, as far as the general death rate was concerned. In 1898 the last year of Spanish occupation, there were 21,252 deaths, and a death rate of 91.03. In 1899, the first year of our occupation, there were 8,153 deaths, a rate of 33.67. In 1900 there were 6,102 deaths, a rate of 24.40. This remarkable decrease was as gratifying as it was unexpected. Smallpox had been entirely eradicated. But the great result at which we aimed seemed to be as far away as ever. Our sanitary measures, if they had any effect upon yellow fever, seemed to increase it. The cleanest and best built part of the city seemed to suffer most from the disease, and the best fed and best cared for part of the population was that which had the largest rate of deaths from yellow fever. It was the well-to-do class of Americans, and the higher officials on the staff of the Governor-General who suffered out of all proportion to the rest of the population. In 1900, on the staff of the Governor-General, the Chief Quartermaster, the Chief Commissary, one of the aides, and one of the Inspectors-General, all died of yellow fever. And preceding that year the Chief Quartermaster and the Chief Ordnance Officer had died. I mention this to show that the class of

DEATHS FROM YELLOW FEVER IN THE CITY OF HAVANA.

YEARS	1856	1857	1858	1859	1860	1861	1862	1863	1864	1865	1866	1867	1868	1869	1870	1871	1872	1873	1874	1875	1876	1877	1878
MONTHS																							
January	....	....	...	....	....	....	....	....	....	....	....	....	...	....	....	18	20	32	7	16	24	8	26
February	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	23	13	23	4	16	24	9	13
March	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	12	4	27	18	32	29	11	5
April	....	....	....	...	....	....	....	....	....	....	....	....	....	....	....	54	4	37	22	34	33	8	28
May	....	....	....	....	....	....	....	....	....	....	....	..	....	....	....	91	13	127	85	32	103	16	53
June	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	201	68	378	172	142	292	143	184
July	....	....	...	....	....	....	....	....	....	....	....	....	....	....	....	234	68	416	361	187	675	249	504
August	....	....	....	....	....	...	....	....	....	....	....	....	....	...	....	138	70	127	416	144	250	285	374
September	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	72	59	35	186	102	97	234	179
October	....	...	....	....	....	....	....	....	....	....	....	....	....	...	....	55	38	28	91	109	42	185	106
November	....	....	....	....	....	....	....	...	....	....	....	....	....	....	....	51	85	5	42	105	31	150	53
December	....	....	....	....	....	....	....	....	....	....	....	....	....	...	....	42	73	9	21	82	19	76	34
TOTAL	1309	2058	1396	1193	439	1020	1386	550	555	238	51	591	290	1000	572	991	515	1244	1425	1001	1619	1374	1559

YEARS	1879	1880	188	1882	1883	1884	1885	1886	1887	1888	1889	1890	1891	1892	1893	1894	1895	1896	1897	1898	1899	1900	1901
MONTHS																							
January	11	16	7	9	14	26	4	4	5	8	17	10	10	15	15	7	15	10	69	7	1	8	7
February	13	9	3	11	9	16	3	0	6	8	5	4	3	10	6	4	4	7	24	1	0	9	5
March	6	20	3	14	21	8	1	0	8	14	5	4	4	1	4	2	2	3	30	2	1	4	1
April	13	44	6	18	34	32	2	1	22	24	8	13	5	8	8	4	6	14	71	1	2	0	0
May	40	40	6	84	75	55	3	1	84	26	17	23	7	7	23	16	10	27	88	4	0	2	0
June	237	50	37	176	162	66	4	14	128	36	37	38	41	13	69	31	16	46	174	3	1	8	0
July	475	179	90	195	177	131	13	33	102	74	48	67	66	27	118	77	88	116	168	16	2	30	1
August	417	148	127	73	148	97	34	39	73	113	73	60	66	67	100	73	120	262	102	16	13	49	2
September	148	75	94	56	50	41	32	37	36	63	37	33	65	70	68	76	135	166	56	34	18	52	2
October	44	32	39	33	72	24	41	16	33	48	21	32	48	54	46	40	102	240	42	26	25	74	0
November	31	21	38	36	45	8	22	13	20	33	21	15	24	52	28	23	35	244	26	13	18	54	0
December	9	11	35	24	42	7	6	9	15	21	14	9	17	33	11	29	20	147	8	13	22	20	0
TOTAL	1444	645	485	729	849	511	165	167	532	468	303	308	356	357	496	382	553	1282	858	136	103	310	18

Havana was known to be the only place in North America where yellow fever was endemic, and it was thus a constant source of infection for all the surrounding countries. This was particularly the case for the cities on the Gulf coast of the United States, and the annual financial loss from this cause was very large. It is estimated that the loss caused by the epidemic of 1878 amounted to a $100,000,000. The United States, therefore, determined to bend every energy toward eradicating, if population whose surroundings were the best and as good as it was possible to make them, were suffering most from yellow fever. And the same can be said of the disease generally throughout the city. In 1898 there were 136 deaths; in 1899, 103; in 1900, 310. It looked very much as if the cleaner and better hygienically we got the city, the worse we were making yellow fever.

About this time the Army Board of which Major Reed was president, published the results of their work in Cuba. This work demonstrated that the *Stegomyia* mosquito was the intermediary host of yellow fever. Doctor Carlos Finlay, of Havana, had been maintaining this theory since the year 1880, and had done considerable experimental work on these lines. The Sanitary Department at once went to work on the assumption that the stegomyia mosquito was the only way of propagating yellow fever. We organized the yellow fever work, first, with the view of preventing the female stegomyia from biting a patient suffering from yellow fever. If we could succeed in this, we would, of course, stop the disease when all infected stegomyia had died from natural causes. But in case we failed on this line, we organized work with reference to killing all female mosquitoes that might have become infected in the neighborhood of a yellow fever case. In the case of the failure of these two lines, we organized work looking to the destruction of all larvæ of the stegomyia, with the idea of decreasing as much as possible the breeding of the stegomyia.

To attain the first object, that is, to keep female *Stegomyia* from biting the yellow fever patient, a good system of reporting yellow fever had been gradually worked out. The physician was required by law to report all cases suspected of being yellow fever, and every inducement was given to have this done, by considering the convenience both of the patient and the physician in every possible way. The results show that the plan was successful, and I think after the beginning of 1901 very few cases of yellow fever in Havana were concealed. The immediate method of keeping the patient and mosquitoes apart was that of screening the house at public expense as soon as the case was reported. Ordinarily within two hours after the report was received at the office, the rooms of the patient were entirely screened, so as to completely prevent access of mosquitoes to the quarters. A guard was left at the door to see that the only door communicating with the quarantined area was kept closed, and that only those designated by the sanitary authorities had access to the rooms. The patient was interfered with in no other way. Bedding could be taken in or out, clothing sent to the wash, etc.

To attain the second object, that is, destroy such insects as might have become infected in spite of precautions, or before the patient was screened, pyrethrum powder was burned in all the rooms of the house, and in all of the contiguous houses, the rooms having first been made as tight as possible, and the precaution having been taken to sweep up the mosquitoes from the floor immediately after the fumigation. The mosquitoes were swept up because the fumes of pyrethrum do not kill all the insects, and some will revive when exposed to fresh air. Pyrethrum was used, although not so good an insecticide as other substances, and considerably more expensive than most others. But it was in accordance with our general plan of causing as little inconvenience as possible. Pyrethrum fumes injure no fabric, and it only takes two hours to accomplish the process we used in Havana. In this way we hoped to kill all the mosquitoes infected by the patient concerned; and by fumigating the neighboring houses, to get any that might have escaped.

To accomplish the third object, we went systematically to work to destroy the mosquito larvæ. It was found that the principal points of breeding for the stegomyia mosquito were the fresh water collections in the houses of the city. The general water supply of the city being very hard, every family had some means of collecting rain water for domestic purposes, and these collections were the great breeding points of the stegomyia. Ordinances were issued requiring all collections of water to be made mosquito proof, and a large force was kept constantly at work seeing that these ordinances were carried out. Every house in the city likewise had a cesspool on the premises, in which the sewage from the house was collected. This was another source of mosquito breeding, though not to any great extent for the stegomyia. These cesspools were generally inaccessible, being covered in in various ways. And the breeding of mosquitoes here could only be prevented by constant application of petroleum. We endeavored once a month to put petroleum in each cesspool in the city. In the suburbs, the breeding places were in the marshy ground and irrigation gardens. This was the most difficult problem, and it could only be met by draining wide areas. Where we could not get rid of the water collections in any other way, we used petroleum, but I look upon petroleum in mosquito work as an acknowledgment of defeat, and the most unsatisfactory means of getting rid of the mosquito. Later in the season, as yellow fever began to decrease, we also added measures to prevent the introduction of yellow fever cases from the surrounding country. We established a system of inspection whereby all nonimmunes coming into Havana were inspected daily by a medical officer, until six days had expired from the time of their last exposure. This in yellow fever hygiene is an entirely new measure, as far as I know. It was adopted in England with regard to cholera, and its advantages are obvious, as it does not interfere with commerce and travel in the least. With us it was entirely successful, as of the 1,275 non-immunes coming into the city from infected points, 27 developed fever, and, as far as we know, no case developed yellow fever that was not under the observation of the inspector. These cases, admitted from infected points, were immediately screened, and as far as we could tell, did no harm. The success following these measures directed against the mosquito, were to me very unexpected. The first mosquito fumigation occurred February 4. (You will please recall that during most years in Havana there were more than 500 deaths from yellow fever, and in many, 1,000. In January, 1901, there were seven deaths; five deaths in February; one in March; none in April, May and June; one in July; two in August and two in September, and from that time up to the present, none. That Havana has now passed over a year without a single case of yellow fever, and that in the preceding 130 years there has never been, with possibly three or four exceptions, a year in which there have been less than 100 deaths from this disease, and ordinarily nearer 500.) It had seemed to me that even granted that the mosquito was the only way of transmitting the disease, it would be impossible to affect to any great extent the number of mosquitoes bred, or to kill off the mosquitoes after they had become infected. In any fumigation, no matter how perfect, a considerable number of mosquitoes must escape. But the conditions have turned out very much easier than they seemed. The *Stegomyia* is a comparatively rare mosquito, being, on the average, only about four per cent. of those in Havana; and I presume that very few become infected under natural surroundings from each case of yellow fever. And when we come to think of it, it is evidently the case. Say there are 1,000 mosquitoes in a house, which is probably a large average; a case of yellow fever occurs in this house. It is only infectious for three days. Of these thousand mosquitoes probably only 500 are females, and only the female bites. Of these 500 females only four per cent. on the average are *Stegomyia*. That would make 20 female *Stegomyia* in the whole building. I think it would be a large estimate to say that one-fifth of the mosquitoes in a building of 25 or 30 rooms would bite each individual in the course of three days. This would give us four infected mosquitoes. In the natural course of events probably only two of these four would survive for two weeks, the time necessary to render her capable of transmitting the disease. The mosquito stays pretty close, and if the case is reported pretty promptly and screened, every probability is that the two mosquitoes would be in the screened area, and if not, the chances are that they would be somewhere in the house, or if they have escaped from the house, in some one of the adjacent houses.

So, apparently, our measures, in the course of a few months, killed every one of the infected mosquitoes. And likewise with the general work of mosquito killing. In a large majority of cases in a city, the mosquitoes in an individual house are bred on the premises of that house. Nine times out of 10, it is some old tomato can, or empty barrel, or something overlooked about the house that causes mosquitoes to be bad there. At any rate, this is the case in Havana. Generally you will find mosquitoes bad in one house, and two or three doors off, none; and our measures for destroying the fresh water breeding places in the city had in May, 1902, at the time of the termination of the military occupation, eradicated the mosquito from most parts of Havana. An inspection made in January, 1901, just before the general mosquito work, showed 26,000 breeding places for larvæ within the city limits. An inspection made in January, 1902, showed less than 300 in the same area. This is a fair measure of the decrease of the mosquito in the city generally. But if the measures of punishing people for breeding mosquitoes on their premises are not enforced, one rain will suffice to supply breeding places, and in two weeks there will be as many larvæ as ever about the city.

The attempt to do away with mosquitoes in the suburbs seemed equally hopeless, but the results were very satisfactory. Persistent ditching and draining in every direction accomplished a great deal. It is surprising to see how little ditching will make a muddy field dry. The *Anopheles* is a mosquito breeding principally in the suburbs, and the decrease in malaria will be a fair measure of the decrease of the mosquitoes in the suburbs. In 1900, the year previous to mosquito work, there were 344 deaths in Havana from malarial fever; for 1901, the first year of the mosquito work, there were 151 deaths; for the first nine months in 1902, there were 68 deaths, and this rate if maintained for the year will give 90 deaths for 1902. It seems to me that our work in Havana demonstrates the discovery that the *Stegomyia* mosquito is the intermediary host of yellow fever, and the only way of transmitting it, and it has solved the problem for the future of the control of yellow fever. And not only that; it shows that it is in the bounds of practicability to extinguish yellow fever entirely from all parts of the world. It seems to me now evident that if Havana can be kept free from yellow fever, say, for 20 years, the disease will have disappeared from North America, because, as I have shown above, an endemic focus, even if left to natural causes, will disappear of itself, and, in the course of time, there will be left no point of infection for North America. It is possible, of course, to become infected from Rio Janeiro, but with a good quarantine system, this is not probable. And, of course, with a focus like Vera Cruz, in which the epidemic lasts for many years, it is possible for the disease to be kept up by its continuance in the smaller communities, in Yucatan and Mexico during the intervals between epidemics in Vera Cruz. But it is not probable. I mean to say that a number of epidemic foci within infecting distance of each other can have the same effect in keeping up the disease as an endemic focus.

Havana has been the great source of infection for all the shores of the Gulf of Mexico and the Caribbean Sea; and if it can be kept free, I believe that the other points will gradually free themselves.

And if, in the course of time, the same measures are adopted at Rio, the same results would follow. And with Rio and Havana gone as foci of infection, I think that yellow fever would gradually become a disease of the past, the first disease to become extinct, of which man has any history. And the parasite of yellow fever, like the dodo and buffalo, will disappear from his earthly haunts, and be only known historically from the fearful mortality he has caused man.

TABES DORSALIS: A STUDY OF 140 CASES OF LOCOMOTOR ATAXIA.[*]

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PART I: HISTORY AND ETIOLOGY.

History.—The story of the recognition and interpretation of the disease now universally known as "tabes" and "locomotor ataxia" is not without interest to every physician. In no more striking way can the great strides made by clinical medicine in the past half century be shown than by recounting this story.

Tabes is the commonest organic disease of the central nervous system. It is a disease whose clinical accompaniments are so striking that often it can be diagnosticated by the layman, and to recognize the average case the general practitioner requires but little experience in the diagnosis of nervous disease. In view of this, it is surprising that a description of the disease was not incorporated into medical writings until the beginning of the second half of the nineteenth century. Writers of different nationalities claim for one of their countrymen, the credit of its recognition. Their claims are often based upon emotional rather than intellectual evidence. English writers maintain that Todd discovered the disease in the forties, and published an exact account of it in 1847. French writers aver that Duchenne deserves the honor of having first depicted it understandingly. The Germans state that it is incontestible that the disease was first recognized in their own country by Romberg. There is a measure of truth in all of these claims, but the facts gathered from the writings of the above-mentioned investigators, and their contemporaries, are that in 1840 there was read before the Medico-Chirurgical Society of London,[1] a paper by Edward Stanley in which the disease now known as tabes was first described. Although he did not give the disease a special name he diagnosticated it as an affection of the spinal cord and prophesied that when the case came to autopsy certain lesions of the posterior part of the cord would be found. He, like Todd, a few years later seemed to have no interest in the discovery of a new disease, and apparently he was not aware that he had encountered one. At that time discussion of the origin and function of the posterior roots and posterior columns was very keen. It was to substantiate his views of these that Todd who, Gowers maintains, was the first to describe the disease in England, utilized his cases, which were undoubtedly genuine cases of tabes dorsalis. Todd says,[2] "In many cases in which the principal symptom has been a gradual increase of difficulty in walking, the posterior columns have been the seat of disease. Two kinds of paralysis may be noticed in the extremities, the one consisting simply in the impairment or loss of voluntary motion, the other distinguished by a diminution or total loss of the power of coordinating movements. In the latter form, while considerable voluntary power remains, the patient finds great difficulty in walking and his gait is so tottering and uncertain that his center of gravity is easily displaced. These cases are generally of the most chronic kind. They are dependent upon disease of the posterior columns. Sensation is affected only when the morbid changes extend to and involve the posterior roots of the spinal nerves." This, it will be seen, is a fair, superficial description of tabes. Todd distinguished admirably between paralysis and ataxia, but instead of dwelling upon the disease as a clinical entity, as did Romberg, and Duchenne, particularly the latter, he utilized the cases to substantiate the statement that neither anatomy, pathological observation, nor experiment lend sufficient countenance to the doctrine of the identity of the function of the posterior roots and posterior columns to justify us in concluding that these columns are the ordinary channels for the transmission of the sensitive impressions made upon the trunk and the extremities. Todd's theory was, "that the posterior columns propagate the influence of that part of the encephalon which combines with the nerves of volition to regulate the local motive powers, and serve as commissures in harmonizing the actions of the several segments of the cord."

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[*] This is the first of a series of articles on Locomotor Ataxia to be contributed by Professor Collins during the winter

[†] I am indebted to Dr. W. H. Dougherty, of Yonkers, an assistant in my Clinic, for aid in the compilation of these statistics.

His contributions do not seem to have been known in France and in Germany.

The part that France had in the recognition of the disease was an important one. In 1845 Bouillaud, of Paris, made an attempt to differentiate the motor infirmities of locomotor ataxia from the paraplegias of spinal origin and was the first to use the term "ataxia" with its present-day application, but he was unsuccessful in associating its occurrence with any given disease. Cruveilheir, in his studies of paraplegia in the "Anatomie Pathologique," 1835 to 1842, described a typical case of tabes. On autopsy there was found degeneration of the posterior columns of the spinal cord, complete in the dorsal and lumbar regions, but limited in the cervical region to the area bordering on the median fissure. As early as 1828, Hutin had demonstrated before the Société Anatomique, a spinal cord with the typical naked eye lesions of locomotor ataxia. It was not, however, until 1858-'59, when a remarkable series of papers on De l'Ataxie Locomotrice Progressive appeared from the pen of Duchenne of Boulogne, one of France's immortal clinicians, that the disease was fully depicted from the clinical standpoint. Duchenne's attention was apparently attracted to the disease as early as 1852, in the course of an investigation on the force of muscular movements in health and in disease. In 1857 he made his first communication on the subject and followed it up with the articles already mentioned. Duchenne said that after he had formed a conception of the disease as a clinical entity, he encountered it so frequently that soon he had 20 cases under observation. In his visits to the Parisian Hospitals he pointed out several cases as examples of this disease and differentiated them from the paraplegias with which they had been classed. Like much of the work of this clinical genius, his contribution to the recognition of the disease was given wide dissemination by Trousseau in his clinical lectures.

In Germany the first contribution of any importance to the disease which we know as "tabes" was contained apparently in an essay by Horn, in 1827. In this essay, entitled *De Tabe Dorsualis Præclusio,* the name tabes dorsalis was applied to a condition similar to that to which we now apply it, and not to the condition of sexual neurasthenia, or hypochondriasis, to which the term was applied by early writers from the time of Hippocrates. In 1835-'36 Nasse[3] referred to several cases in which the posterior columns were affected and which were probably cases of tabes. In 1842, Jacoby of Berlin, published a report of several cases entitled *Exemplum Tabes Dorsualis,* and in 1844 Steinthal[4] reported the clinical history and postmortem findings of a case which was in every way typical. This was undoubtedly the first autopsy. It was not, however, until Romberg published the second edition of his *Lehrbuch* in 1851, that tabes received its first adequate description in Germany. Romberg's attention had been given to cases of this nature for some years before he described it and he was aware of the reports which have been mentioned. He says that he had recognized the sign now known by his name, viz., swaying on standing with the feet together, nearly 10 years before. He pointed out that patients with this disease experienced great difficulty in washing the face in the customary manner, and on walking in the dark. He described very accurately the impairment of the muscular sense, and the uro-genital symptoms of the disease. He failed, however, to recognize that the motor disturbance was incoordination, not paralysis. He also estimated the duration of the disease with much accuracy. Apparently he did not encounter what may be called the neuralgic type of tabes among his earlier cases for in his description insufficient emphasis is laid upon pain as a diagnostic symptom. Nor did he recognize that syphilis was an etiological factor. He advocated the view that exposure to cold and wet was one of the important causative agencies. Since his time all writers have gone on enumerating this as one of the causes of tabes without adequate reason. I hope to show later that his description of the pathological changes, so far as can be made out with the naked eye, is tolerably correct.

From the descriptions of Todd in England, Romberg in Germany, and Duchenne in France, dates the beginning of general knowledge or recognition of the disease tabes or locomotor ataxia.

Duchenne's description of the disease is undoubtedly the most finished, and his understanding of it the most comprehensive. Although he wrote after the two first-mentioned it is said, but without show of proof, that he did not have access to, or knowledge of the writings of Stanley, Todd and Romberg when he published his first paper. Credit for applying the word tabes or tabes dorsalis, the name that is now universally given to the disease is due to Romberg. He rescued it from the unjustifiable usage of the ancients, for instance Hippocrates, who says that tabes dorsalis is the result of a wasting of the marrow of the backbone in an unnatural way. Hippocrates' delineation is typical of the disease which we now call sexual neurasthenia. In England, the name "Tabes Dorsalis" came into widespread use in the eighteenth century. In 1748 Lewis published a pamphlet entitled *Practical Essay Upon the Tabes Darsalis;* in 1780 J. E. Smyth published a brochure on the same subject, which had a very considerable popularity, insomuch as it reached its twenty-sixth edition. In 1800 H. St. John Neale, a London practitioner of excellent professional appointments, wrote a large book on tabes dorsalis of Hippocrates and dedicated it to Thomas Young the Surgeon-General of the English army. In all of these works, the expression "tabes dorsalis" was used in the same sense to indicate the wasting of the back muscles, supposed to be due to sexual excesses. This idea of the wasting of the muscles of the back, and of the spinal marrow incident to such habits, was very popular with physicians in the eighteenth century. Boerhaave, the greatest physician that Belgium has produced, was a firm believer in it, and Tulpius, the physician Burgomaster of Amsterdam, whom Rembrandt has immortalized, contributed to the literature on this subject. It needed some courage on the part of Romberg to kidnap a name so widely used in both an etiological and a clinical sense.

Knowledge of the disease increased steadily after the work of the pioneers. In France Topinard summarized the information upon the subject in 1864 in a prize essay entitled *De l'Ataxie Locomotrice.* A year earlier Eiseman had published an article on the subject entitled *Die Bewegungsataxie* and in the same year Friederich began his contributions to the subject in *Virchow's Archives.* In England Gull, in 1859 differentiated the disease from the paraplegias and gave a lucid clinical description of it.

Important contributions to the clinical knowledge of tabes after this were made by Westphal, Erb, Argyll-Robertson, Delamarre, Charcot, Duplay, Morat, Mitchell, Biernacki, Hitzig, and many others.

In 1875 Westphal first pointed out that the knee-jerks are lost in tabes, and two years later in a second contribution he showed the value of this symptom in the early diagnosis of the disease. The truth of this received prompt corroboration from his countrymen, but particularly from Erb and from neurologists the world over. In 1869 Argyll-Robertson described the pupillary state in tabes, loss of reflex activity of the pupil on exposure to light, which is now universally known by his name, and which was soon recognized to be one of the most important and constant physical accompaniments of the disease. French investigators were concerned particularly with the attacks known as crises and with the trophic manifestations of tabes. Delamarre gave an excellent description of attacks of pain on vomiting occurring with tabes, but Charcot gave the first adequate description and the name "gastric crises" to these attacks in his lectures on diseases of the nervous system. Fèrèol described laryngeal crises in 1868, Raymond and Lereboullet described nephralgic crises in 1876. Since then "crises" (*i.e.*, sudden severe disturbances of function) of almost every visceral organ have been described, the last, being "heart crises" (Bloch). The trophic disturbances of the disease were studied with much care and in 1873, Weir Mitchell called attention to the liability of the bones to fracture spontaneously. In 1873 Duplay and Morat described the perforating ulcers of tabes and pointed out their true significance, insisting that they were dependent upon nerve lesion. These ulcers had been described in France by Nelaton, Pean, Despres and others. Their interpretation from a pathological standpoint has been contributed to by many, but we are particularly indebted to Westphal, more than to any other writer of note, for calling intelligent attention to this association.

In the etiology of the disease, the most important contributions, by all means, have been made by Fournier and Erb. They established incontestibly the connection between syphilis and tabes. Fournier was by no means the first to note the possible or probable relationship, but he was the first to show that the vast majority of those who develop locomotor ataxia had had syphilis. Duchenne had spoken of the subject in 1859. Topinard, Vulpian, Fèrèol, Schultz and Carre had all noted that syphilis had preceded the occurrence of the disease. After Fournier's contribution, the subject was taken up by Gowers, Erb and Strümpell and many others. At the present time the opposition to this view has narrowed down practically to one clinic, that of Leyden, but in the beginning this teaching was opposed by Charcot, Westphal, Remak and Bernhardt. For many years Virchow opposed the syphilitic origin of tabes and shortly before his death he enumerated himself again with the opposition.

The morbid anatomy of the disease was developed particularly by Rokitansky and Turck, and by Lissauer in Germany, and by Bourdon and Luys,[6] and by Pierret working under the direction of Charcot and Vulpian in France and later by Déjerine. The many contributors to our knowledge of the widespread anatomical changes which go on in tabes, need not here be mentioned, as the majority of them will be spoken of later, especially when the morbid anatomy of the disease is under discussion.

Etiology (1) *Statistics.*—For a number of years I have been interested in the subject of tabes, principally in regard to its etiology and prognosis, and consequently I have been careful to get as full information as possible from the cases that I have studied. The 140 patients with tabes upon which this subject is based, were seen personally in dispensary, hospital and private practice. The 140 patients constituting this series were distributed as follows: Private patients, 52; Hospital patients, 47; Dispensary patients, 41. Thus the majority of them were seen either in hospital or private practice and opportunity was therefore given to study them with much care. Many of them have been under personal observation for upward of 10 years, so that something has been learned concerning the prognosis of the disease from this experience. If these cases are analyzed without prejudice and without preconceived notion as to the etiology of the disease, the following facts seem to be established.

Sex.—Of the 140 patients there were 124 men (83 per cent.) and 16 women (17 per cent.) a ratio of very nearly 7.5 to one.

Station.—Of the men 78 were married, 12 were widowers, and 34 single. Of the women six were married, four were widows and six were single.

Age.—The average age at which the symptoms first appeared was 38½ years. Twenty-two cases occurred between twenty and thirty years, 48 between thirty and forty years, 45 between forty and fifty years, 14 between fifty and sixty years, and one each at eighteen and sixty years. Fifty per cent. of the cases among the women occurred between the ages of twenty and thirty while in the same decade there were only 11 per cent. of the men.

The youngest patient, a Russian boy of eighteen years, gave a neuropathic family history and a personal one of promiscuous sexual intercourse from earliest youth. Although he denied syphilis, it is most probable that he had had it.

Races.—Among my 140 cases there were four negroes, two males (dispensary patients) and two females (hospital patients), and one Chinaman. Both of the negroes and one negress had had syphilis. The fourth colored patient could not be made to comprehend what syphilis was, and therefore no intelligent information could be got from her.

Nationality.—Of the 140 patients there were 59 native born, 22 Germans, 15 Irish, nine Russians, eight English, seven Italians, six Austrians, two each from Scotland and France, and one each from Canada, Cuba and Sweden. The nationality of seven was not ascertained.

Occupation.—These were varied, those given most frequently were clerks 18, laborers 11, mechanics eight, drivers seven, merchants five, tailors five, policemen four, barbers four, physicians three, clergymen two, lawyers two, artists two, actors two, brokers three, bakers two, waiters two, commercial travelers two, railway engineer one, gamblers four, seamstresses and cooks two, railway conductor one, nurse one, housewives five, actresses two, teacher one, valet one, retired two.

Syphilis.—Eight-five of the 124 male patients or 68 per cent. gave a definite history of syphilis. Of these 46 recalled the occurrence of secondary manifestations and gave a description of them.

There were 19 other patients in whom a previous luetic infection seemed probable; six of these gave a history of "soft chancre," four admitted having had at a remote period a pimple or a slight sore on the glans penis. The remaining nine had given at some time evidence of syphilis in having had a suggestive eruption of skin or mucous membrane, symmetrical scars upon the legs, or an alopecia of rapid development. In addition, facts elicited relative to their habits and mode of living fully justifies placing them in the category of "suspected syphilitic." Admitting the latter 19 to be luetic the percentage of syphilitic patients in the series is 83.

Gonorrhea occurred in 13 patients who had had syphilis and in 12 who had never been thus affected, therefore 117 of the 124 or 94 per cent. gave very suggestive evidence of, or admitted having had some form of venereal disease.

Of the 85 male patients who gave a history of syphilis, the specific infection was stated to be slight in 80. In five only was there recollection of attending or sequential symptoms which would entitle it to be called severe. When there was cutaneous or mucous membrane ulceration, iritis, keratitis, protracted erythema, fever, profound disturbance of nutrition or other symptoms of comparable severity the disease was considered severe. In many of the cases in which the history of syphilitic infection was made out, the patient maintained that the initial lesion was very trifling, a pimple or slight abrasion and the rash which was scarcely noticeable lasted only a few days or "a week."

It seems to be well established that the intensity of syphilitic infection as manifest by local lesions and so-called secondary symptoms, stand in no relationship whatsoever to the development of tabes, either in regard to the time at which it develops or the severity of its symptoms.

In two instances the chancre was extra-genital; on a clergyman's lip and on a physician's finger. (The ratio of genital to extra-genital chancres is about 15 to 1.)

Syphilis—Females.—Analysis of the 15 female patients on this series in reference to the question of previous syphilitic infection is most instructive.

Case 1.—Mrs. X., denies syphilis. She is married to a syphilitic man. She has had one miscarriage and one living child, and her conduct has been such that she might legitimately have become infected. She began sexual intercourse when a child, and has had a wide experience.

Case 2.—Miss X., had been ill for a number of years with typical tabes, but the diagnosis had not been made. The patient has no idea what syphilis means. Her conduct had always been irreproachable so far as is known. She had been engaged for many years to a man who was very dissolute and who had to be discarded because of his habits. If he suffered from syphilis she was entitled to it. She gave a history of rash and sore throat.

Case 3.—Miss X., seen on behalf of a corporation against which the patient had brought action, claiming that her disease had resulted from an injury from one of the defendant's cars. Patient was unmarried and she could not be interrogated in regard to syphilis. She had received a great deal of gynecological treatment, local application, etc., from the physician with whom she was seen.

Case 4.—Miss X., case of tabes in which the initial symptoms were optic atrophy. Her life and experience easily entitled her to syphilitic infection, although no history of it could be obtained.

Case 5.—Mrs. X., her husband was distinctly syphilitic. She had had two miscarriages.

Case 6.—Mrs. X., no distinct history of syphilis but she had had one miscarriage and no children.

Case 7.—Mrs. X., resented questioning on syphilitic infection and left the Clinic with the conviction that her feelings had been outraged. Complete optic atrophy was an early symptom.

Case 8.—Mrs. X., married when very young to a sailor. She had had two miscarriages and lived a dissolute life. Body tatooed.

Case 9.—Mrs. X., actress; no specific history and nothing bearing upon it.

Case 10.—Mrs. X., actress, married three times. Second husband syphilitic. Had a number of miscarriages. Began sexual intercourse when about thirteen years old. Experience fully entitles her to syphilitic infection.

Case 11.—Miss X., denies all knowledge of syphilitic disease. She has symmetrical scars which are almost pathognomonic of syphilis. Her experience entitles her to syphilitic infection.

Case 12.—Mrs. X., syphilitic infection when nineteen years old. History of secondaries and miscarriages.

Case 13.—Miss X., there had been no suspicion on the part of patient or physician that tabes existed. The physician was positive that it was needless to interrogate her concerning syphilitic infection. She reluctantly admitted however relations entitling her to infection, and gave as clear a history of secondary infection as could possibly be given.

Case 14.—Mrs. X., no history of syphilis and nothing in her history that could be construed as syphilitic.

Case 15.—Mrs. X., two years after marriage she had diplopia which lasted for a year and a half. Has been sterile.

Case 16.—Miss X., clear history of syphilis. Not treated. First symptoms six years after infection.

Thus out of 16 female patients with tabes 11 had positively been infected with syphilis, *i.e.*, 70 per cent. who had positively had syphilis. In one of the patients who did not give a history of syphilis optic atrophy of a pronounced degree was an early symptom. It is well known that the cases of tabes with early optic atrophy are almost invariably in patients who give history of syphilis. In another patient, there was a history of one pregnancy which terminated at the fifth month and then sterility.

Female tabic patients seen in private and in hospital practice were syphilitic. Those seen in dispensary practice denied syphilis. This, it seems to me, is very instructive. In many of the cases seen in private practice or in hospital, I did not discover that they were syphilitic for perhaps a year after I saw them. The cases seen in the dispensary cannot be followed sufficiently long to get positive information on this point.

Habits.—Of the 140 patients, 42 were addicted to intemperate use of alcoholic drinks. Fifteen of these were syphilitic. Eight men and three women had been given to intemperate sexual indulgence, and of these seven were syphilitic. Two were addicted to the very excessive use of tobacco, and of these one was syphilitic. Sixteen of the 140, 15 men and one woman, were intemperate in the use of alcohol and tobacco, and sexually. Of these 12 acknowledged having had syphilis.

Trauma.—Bodily injury of some kind was claimed to be an etiological factor in five instances. In two cases the patients claimed that the tabic symptoms appeared first shortly after the injury. One was a woman of thirty years who had been thrown to the floor of a street car, by the bunking of one car into another. After the accident she was hysterical and the following day complained of pain in the back and shoulders and examination showed trivial bruises. Within a few weeks, she cannot state more accurately, she became ataxic. When examined five months later, she presented most of the classical symptoms of tabes. She denied any previous disease save leucorrhea, for which she had received a great deal of treatment by way of local applications to the cervix and uterus. Patient was unmarried and it was impossible to question her regarding a possible specific history.

Another patient, a clergyman, attributed his illness to a fall from a street car for which he held the railway company responsible. When he came under observation 14 months after the injury and the signs of tabes were then unequivocal. In this case there was a history of syphilis. The three other cases were as follows: (1) Male, struck on the head and back three years before, had had syphilis. (2) Male, five years previously had some ribs and an arm fractured, history not very complete. (3) Male (history incomplete), the patient suffered fracture of the pelvis a few years prior to onset of tabes.

Mental and Physical Hard Work, Worry—The Strenuous Life.—Six of the series gave a history of physical hard work, but in only one did this element occur alone. Three were syphilitic and two were addicted to alcoholic and sexual excesses. In only one instance was there a history of exhausting mental work in connection with the conduct of a large business. Nor is worry or other distress of mind mentioned except in two instances. In fact the majority of the patients with tabes seen in private practice seemed to have borne the burdens of life with as much equanimity as the average individual.

Leg Weariness.—As all classes, social and professional, are represented in this series, it follows that there were some whose occupation of necessity was conducive to leg weariness, but nothing is said in the histories in regard to this, aside from mere mention of the occupation. The peddlers, policemen, barbers, "bookmakers" and waiters who represent the leg-weary class of this report were all with one exception syphilitic.

Previous Diseases.—Gonorrhea, 25 cases, 13 of whom were syphilitic; rheumatism, six cases, three of whom were syphilitic; typhoid, six cases, three of whom were syphilitic; malaria, three cases, two of whom were syphilitic; influenza, three cases, two of whom were syphilitic; variola, three cases, two of whom were syphilitic; varioloid, one case, syphilitic; pneumonia, five cases, four of whom were syphilitic; pleurisy, one case, syphilitic; spinal meningitis, one case, also syphilitic; peritonitis, one case, not syphilitic; "brain fever," one case, not syphilitic.

The case of brain fever, all the cases of variola, four of the six cases of typhoid, two of pneumonia antedate the onset of tabes by many years.

Gonorrhea occurred three times, pneumonia twice, rheumatism, malaria and spinal meningitis once between the luetic infection and the beginning of tabes. In one case the tabic symptoms developed in a woman within a year after an attack of peritonitis. This patient denied syphilis. In two of the three patients who had had influenza the symptoms of tabes manifested themselves almost immediately thereafter; both of these patients, however, gave a previous luetic history.

Effect of Antisyphilitic Treatment in Delaying and Preventing Tabes.—Opponents to the syphilitic origin of tabes maintain that if tabes is of syphilitic origin it should not occur so frequently in those who have had adequate and effectual treatment as in those who have not had such treatment. If their premises are sound the logic is unassailable.

The important facts relative to the relationship of syphilis and the effect that treatment had in preventing the development of tabes is shown in the following table:

Number of private patients affected with syphilis,	45.
Average age when tabes developed,	40.5
Average age when infected,	26
Average duration of treatment,	22 months.
Average time between infection and first symptom of tabes,	11 years.

Number of hospital patients affected with syphilis,	35
Average age when tabes developed,	39 years.
Average age when infected,	24 years.
Average period between syphilis and tabes,	12 years.
Duration of treatment,	5 months.

Number of dispensary patients with history of syphilis,	16
Average age at which tabes came on,	36 years.
Average time between syphilis and tabes,	11 years.
Average age when infected,	24 years.
Average duration of treatment,	3 months.

If these figures can be relied upon they seem to show (1) that anti-syphilitic treatment did not prevent the development of tabes and (2) that such treatment did not delay the development of the disease. The cases in which such treatment was carried out most carefully developed tabes as early or earlier than those in which the treatment had been desultory and incomplete. This is practically the conclusion which I reached six years ago. This does not by any means speak against the belief that tabes is genetically related to syphilis.

Commentary.—The relative frequency of tabes in male and female is very differently estimated by different writers. It is generally believed that tabes occurs very rarely in women. The following review of recent articles shows the sex frequency as given by authors of different nationalities.

Gowers (England), 10 to one; Bramwell (Scotland), 10 to one; Fournier (syphilologist, France), 26 to one. Déjerine and Thomas, Grasset and others (France) say that a very small proportion of all cases occur in women; Motschutkowski (Russia), 13 to one; Erb (German), 19.5 to one; Koschewioff (Russia), 11 to one. Bonar (Starr's cases), 6.5 to one. Thomas (American), seven to one. From Berlin comes a very different relativity which is quite startling. Hoffman analysing Westphal's cases gives a proportion of 2.7 to one. Kuhn (Jolly's Clinic), 1.6 to one. Recently Mendel has analyzed 1,013 cases of tabes of which 725 were men and 288 women, *i.e.*, a proportion of 2.7 to one. These were dispensary cases. In private practice the proportion was very different, there he saw only one woman to every 25 men with tabes. He remarks therefore that the frequency of tabes in women has the same relationship as general paresis, *i.e.*, about three to one among the lower classes, while in the higher classes the proportion is eight to ten times greater. Mendel analyzes his statistics of female tabics with particular reference to the question of syphilis bearing in mind the relationship that sterility has to syphilis, and the fact that frequently it is the only indication of syphilis, and gives his attention particularly to a determination of that. Of his 288 cases, 252 were married, and among these there were 83 instances of childless marriage; *i.e.*, about one third were sterile. Out of 55 of these 83 cases conception had never occurred. In the remaining number a few had conceived, but they aborted in the early months of pregnancy. It is the general belief that about 10 per cent. represents the proportion of sterile marriages among the lower classes, so that these statistics of Mendel show that sterility in tabes must have some other explanation.[7] He infers that it bespeaks antecedent syphilitic infection.

My own statistics show that the ratio of the disease in men and in women is 7.5 to one: practically the same proportion as that given by other recent American writers (Thomas, Bonar, *et al.*). This proportion is so at variance with the statistics of Berlin writers above quoted that it is very difficult to suggest an explanation. This much can be said without fear of contradiction. (1) Although tabes is, in this country, still an uncommon disease in women, it is becoming more frequent; (2) as women force their way into the professional, political and social arenas formerly usurped by men, so in proportion do they fall victims to the diseases associated with civilization. (The "strenuous life" of Americans.) (3) The same factors are responsible for the disease in women as in men.

. In passing it may be said that one of the arguments used by those who have opposed the view that syphilis plays the most important part in the etiology of tabes, is that tabes occurs so rarely among women. This contention must soon be discarded. It is no longer applicable to the population of Berlin.

My statistics seem to show that tabes occurs oftener in married than in single men and women (72 per cent. married or widowed). This, I take it, does not mean (as Bramwell seems to think) that married people are more liable to tabes than single people. It merely shows that at the present stage of social evolution marriage is not only regarded as a sacrament, but also the "correct thing" to which the average individual conforms.

There is nothing noteworthy about the age at which the disease developed in my cases. Full maturity is the period when tabes begins, thirty-five to forty-five in men and thirty to forty in women. It may occur at any age. The oldest case in my series was sixty. Bramwell mentions a case in which the disease began at seventy-three. Only one of my cases can be considered an example of juvenile tabes. There was no case of infantile tabes. Many writers do not distinguish closely between infantile and juvenile tabes, but it is quite essential to do so for the light it may possibly throw upon the etiology.

Infantile and Juvenile Tabes.—Tabes is a very uncommon disease in children. That it occurs however, is abundantly verified by cases reported during the last few years. It is certain that some of the early reported cases of locomotor ataxia in children, such as those of Kellogg,[8] and Hollis[9] are cases of hereditary ataxia; the first mentioned, of spinal origin, the second of cerebellar. Most of the 30 cases of infantile cases collected by Hildebrandt, in an Inaugural Dissertation in 1892, are likewise cases of Friedreich's disease. There can be no doubt also, I think, that the case of Leubuscher,[10] is one of Friedreich's disease. The same may be said of a case reported by Freyer, while that reported by Jakubowitsch is in all probability one of pseudo-tabes of neuritic origin. Strümpell[11] has reported the case of a thirteen-year-old girl, in which tabes and general paresis, an expression of the same lesion in different parts of the body coexisted. Remak has, however, reported three cases,[12] in children twelve, fourteen and sixteen years of age, that are genuine cases of tabes. Other cases are those of Mendel,[13] beginning in the eleventh year with atrophy of the optic nerve, the clinical picture was not clearly that of tabes, and Bloch,[14] a child thirteen years old. (Although this was the most legitimate diagnosis to make.) Bloch[15] reported a second case of infantile tabes in a child fourteen years old. The symptoms were entirely typical. This patient had attacks of palpitation which the author thinks may be cardiac crises. V. Dydynski[16] publishes the case of an eight-year-old boy in which the symptoms began when he was five years of age with disturbance of function of the bladder, and later typical symptoms of tabes, and Brasch,[17] a girl of fifteen, whose father had had syphilis and died of tabes. The child showed unmistakable signs of syphilis when thirteen days old. Kron has recorded a case,[18] in which the child of a father with general paresis was infected with syphilis by a nurse when eight months old. At the age of thirteen years symptoms of tabes began. Berbez,[19] reports two cases beginning at sixteen and seventeen years of age respectively. Gumpertz[20] has reported the case of a nine-year-old child. He is of the opinion that his case bespoke genuine syphilitic disease of the cord and not a metasyphilitic spinal disease such as tabes. But knowing his views on the relation of syphilis to tabes, the suspicion enters my mind that he is impelled to this statement that he may show that syphilis is not the important factor in the etiology of tabes which many think.

V. Halban[21] reports four cases of juvenile tabes in patients from seventeen to twenty-four years of age.

Three cases of infantile tabes due to congenital syphilis have recently been reported by James.[22] Although the father denied syphilis he had been under treatment in a hospital when nineteen years old for a urethral discharge and suppurating bubo which had left a scar. There were manifestations of congenital syphilis in some of the children who did not develop tabes. Case I, a girl of twenty was quite typical of tabes while in Cases III and V, a girl of fifteen and a girl of eight, the diagnosis of tabes was the most probable. Other cases have been reported by Gowers[23] and Mott.[24] There are then altogether upward of a dozen cases in the literature. This shows how very rare tabes infantalis really is.

What has been said under the captions Race and Nationality need not here be repeated. I think it has been sufficiently proven that these do not exempt from tabes. Physicians in our new territorial possessions, particularly the Philippines, where syphilis is very common, will, I hope, soon apprise us of the frequency with which parasyphilitic diseases of the nervous system are met there.

One of the arguments used against the important rôle which syphilis plays in the causation of tabes is that tabes is a very rare disease among races (Negroes, Chinese, etc.) in which syphilis is very common. But it will no doubt be found that in proportion, as these races follow in the foot-steps of the twentieth century Caucasian, so in proportion will they develop tabes.

Among Thomas's 111 cases of tabes there were five negroes. McConnel of Philadelphia has published five cases of locomotor ataxia, all syphilitics. Holzinger of Abyssinia, says that in 107 patients with nervous diseases there were six of tabes. This is about four times as many as we see in New York in the same number of cases of nervous diseases, so it seems legitimate to infer that the Abyssinians are having one of the customary sequelæ of what they call "our disease" (syphilis). The author says that they do not have neurasthenia in Abyssinia but it is probable that they will not be immune very long.

It is noteworthy also in my case that there was one Chinaman (hospital patient). Of the 124 males 43 were Jews and of the 16 females two were Jewesses. Therefore, so far as race is considered, even my small experience shows that it offers no immunity.

My statistics do not seem to show that there is anything to be learned from a consideration of the patient's occupation. It has been said that commercial travelers furnish proportionately a larger number of cases than other occupations, but my small statistics do not seem to corroborate this. The patients came from almost every profession and occupation, no one save that of "clerk" (used figuratively by the patient to describe any business which he did not own, or no business) seems to predominate.

Tabes and the Intemperate Use of Alcohol, Sexual Excesses and Exposure to Cold and Wet.—Just how much the intemperate use of alcohol and tobacco, and excessive indulgence in sexual excesses have to do with the causation of locomotor ataxia is not very much illumined by these statistics. About one-third of the 140 patients used spirits excessively. Whether this is a larger percentage of intemperance than is normal to the grade of society from which these patients came I am unable to say. My impression, however, is that it is. It is a much larger percentage than is given by most authors. For instance, in 155 cases reported by Bramwell there was a history of marked alcoholic excess in but 10. He states, however, that the actual number was probably larger. In view of what we know of the pernicious effect which alcohol excites upon the neuron, particularly the peripheral sensory neuron, it may readily be seen that the intemperate use of spirits may be a predisposing cause of considerable importance in this disease.

Some writers (Motschutkowski, Hermanides, *et al*), claim that sexual excesses play a very important rôle in the causation of tabes, and this view is very generally accepted by the laity. Neither from my own experience, nor from the published experience of others do I find any justification for such claims. I am convinced that the proportion of sexual excess is no greater in persons who afterward develop tabes than in those who do not have it, or any other nervous disease.

So far as my observations go, exposure to cold and wet have very little bearing on the causation of locomotor ataxia. Still it is accepted by Erb and other authorities as having a causal relationship in a small percentage of cases. I think, however, the number of cases in which it is posited as an etiological factor will grow less as the subject is carefully studied. It was Romberg's idea originally. He saw many patients with tabes from the German army. It is very natural that such cases should give a history of exposure, particularly in time of war, and that symptoms which are often looked upon as rheumatic, not only by the laity but by the profession, should be attributed to such exposure.

Tabes and Trauma.—In every collection of statistics there are some cases that are attributed by the patient to injury. The proportion of such cases is probably about one to 50. Trauma is put down as one of the causes of tabes in most of the books. It often becomes a matter of much importance from a medico-legal standpoint to determine if injury is the real cause of the disease.

Trauma as a cause of tabes, seems to have been first suggested by Leyden in 1863, and three years later by Lockhart Clarke. But it was not until the appearance of Schulze's monograph on the Etiology of Tabes in 1867 that the subject began to attract attention. He reported four cases, but none of them can be considered to show indubitably that the disease was caused by injury. It is universally admitted that syphilis is a cause of tabes. Therefore, a case of tabes, occurring in a syphilitic person after trauma, is due to syphilis and not to injury, although the injury may be an exciting cause. In attempting to estimate the importance of trauma as an etiological factor in tabes, we must exclude not only patients giving a syphilitic history, but those in which the symptoms of the disease develop (1) so soon and (2) so remotely after the injury that the lesions constituting the disease are not likely to be caused by it. Finally, the injury must be of such severity as to entitle it to be called an adequate cause of disease. Because a man develops locomotor ataxia, after a simple experience of daily life, such as a fall, or a blow on one part or another of the body, neither of considerable severity, there is no justification in concluding that such an experience is the cause of a disease so extensive, so chronic, so colossal, as tabes. When the literature of traumatic tabes is reviewed one sees that such trivial occurrences have more than once been considered etiological factors in tabes. For instance, Popinard relates a case which he attributes to strain of the back; Edwards one coming on seven years after an operation on a tooth; Leclorche and Talamon one developing nine to ten months after an ulceration following the excision of a corn. The utter absurdity of attributing such a disease as locomotor ataxia to experiences of this kind is only equaled by that which attributes epilepsy to strain of the eye muscles.

It is impossible even to refer specifically to all of the cases of so-called traumatic tabes in the literature. The vast majority of them on being subjected to critical examination have to be taken out of this category. This is true, for the case of Lockhart Clarke, published in 1876, and for all the cases in Petit's monograph on the subject, published in 1879. Although Petit is very guarded in his statements regarding the importance of trauma as a cause of tabes, his monograph is frequently quoted in support of the view that trauma is a cause of the disease. In 1890, Klemperer took up the subject and published a monograph which contained reference to all the cases of so-called traumatic tabes up to that date. Of all the cases reported by Klemperer there are four, possibly six, in which trauma may have had something to do with causing the disease. In 1895 Morton Prince[25] gave a brief review of the subject, in which he pointed out that not more than 12 of all the cases reported might reasonably be regarded as the result of traumatism. In not one of them did an examination at the time of the accident demonstrate that the patients were free from spinal disease at that time, and in three only is there any statement of previous syphilitic infection.

In 1897 Mendel[26] made an analysis of nine cases of tabes attributed to injury, and concluded that in two of this number the injury might possibly have had something to do with causing the disease. I think it is very doubtful. In the first place one of the patients, in which the symptoms of tabes came on three years after the amputation of the thigh, had syphilis six years before. In the second case, a man forty-two years old, who fell 27 feet and suffered from a contusion of the spine and of the head had been a very hard drinker for many years. Mendel admits that this may have had quite as much to do with producing tabes as the injury. Hitzig[27] made an extensive investigation of the subject in 1894 and recorded two cases. The first, a man forty-seven years old, fell and received a fracture of the left radius, and a dislocation of the left ankle-joint. Immediately thereafter he suffered with pain in the left leg and head, and later a feeling as if the leg had gone to sleep. In the right leg there was no pain or parasthesia. A few weeks after the accident he had difficulty on walking in the dark; soon afterward, lancinating pains, and six months after the injury incontinence of urine. Examination a year later showed a typical case of tabes. To my mind it is impossible to conceive that an accident such as this could cause the slow degeneration in the posterior roots and columns upon which tabes is dependent. It seems to me that the rapidity with which the symptom developed, and their existence almost immediately after the injury indicate that the disease was present before the man received the injury. The second case was a locomotive engineer, fifty-five years old, who denied syphilis. In 1884 he received an injury to the right knee. In 1892 he was in a railway accident, but was not injured, although he was severely frightened. A few days later, symptoms of traumatic neurasthenia developed, and in addition, heaviness of the legs, cold feet and parasthesia. Examination a year later showed the typical picture of tabes. Hitzig concludes that all cases of tabes must be looked upon as following in the wake of a previous infection, and that trauma, exposure to cold and other deleterious influences may be regarded only as exciting causes of a disease, which, if not already under way, is sure to develop later.

So many of the cases recently reported as traumatic tabes do not fulfil the requirements necessary for admission to such a category that it is convenient to mention them here together. For instance, the patient whose history is reported by Pineles (*Neurologisches Centralblatt*, 1896, p. 615) denied syphilis, but the denial goes for naught, in view of the fact that his wife had borne three dead children, that one child had had an eruption on the skin which disappeared under mercurial treatment and that the patient himself suffered from an enlargement of the liver, which improved under mercurial inunctions. The same may be said of a case reported by Trevelyan.[28] while the case reported by Adamkiewicz,[29] in which the tabes came on four years after the patient had been kicked by a horse and suffered a fracture of a dorsal vertebra, is taken entirely out of the category by the length of time which elapsed between the injury and the disease. In the case reported by Seaux,[30] the injuries which followed being thrown from a wagon and run over were of such a nature, viz.: paraplegia, incontinence, and sensory disturbances, as to bespeak a laceration of the cord substance. Just how the symptoms of tabes, which developed later, were secondary to this, the author does not make quite clear. The only justification that Lempke[31] has for considering the case of tabes which he reports due to injury, is that the patient fell into a cellar and got a severe shaking up. There is just as much reason for believing that the tabes existed before the fall as there is for believing that it existed afterward. As I said before, it is absurd to maintain that every experience which a man may have may produce tabes. If this patient had developed cirrhosis of the liver after such an accident, it is not likely that it would be described as traumatic. It is very difficult also, to understand how the injury in the case reported by Gaspardi,[32] viz., the stab of a dagger beneath the clavicle which severed the brachial plexus, produced tabes, unless it be that the writer is a believer in the view of Spillman and Parisot, who in 1888 published an article in which they attempted to show an etiological relationship between tabes and injuries that produce an irritation of the peripheral nerves. It may be said in passing that this view has few or no adherents. In 1898 Trömmer[33] reported three cases of what he considered to be traumatic tabes. The first patient, a man fifty-two years old, who denied syphilis, received an injury to the left foot while helping to fell a tree. Eight days later he complained of weakness and pain in the leg, and in a short time the typical picture of tabes developed. The patient's wife had general paresis. In a second case, a man fell from a wagon striking on his back, and in a third case, the patient received a stab wound in the arm. The author says that from a scientific standpoint, trauma cannot be looked upon as a certain cause of tabes, but that in practice it must be admitted that the clinical manifestations of tabes are sometimes first noticed after trauma, and this, I think, no one can deny.

Erb states that trauma plays a rôle in the etiology of tabes in perhaps five per cent. of the cases, but he cites only one case in which the disease was probably due to injury. In all the others the influence of trauma seemed to be to hasten the onset and facilitate the development of the disease. Prince (loc. cit.) has reported a case in which it seemed fairly clear that the injury, a fall from a street car, was the cause of the disease, in which it was afterwards proven that the man was in the pre-ataxic stage of the disease when he received the injury. This by no means exhausts the list of published cases in which there seemed to be a causal relationship between injury and tabes, but it will suffice to show that in most of the cases, some other factor than the injury might be quite as legitimately considered to be the cause. I make no mention of cases such as that reported by Craig[34] because, in the first place, the disease if tabes was extremely atypical, and in the second place, the symptoms developed a long time after the injury.

In my own list of cases there are three which might be considered traumatic, but in one only is there any real ground for such classification. In that case I was not able to satisfy myself that the injury had anything more to do with the disease than that of hastening its development. It seemed to me that as there were no evidences of injury at the time of, or immediately following the onset save a few slight contusions which disappeared within a short time, and as the symptoms of tabes came on within a few weeks, that it was impossible to reconcile this with the ordinary clinical development and pathological anatomy of tabes. The patient, as has already been said, was reported to have been a strong healthy young woman. Yet it was admitted that she had been under gynecological treatment consisting of applications of medicinal substances to the cervix for a protracted time.

I have never met a case of tabes which I considered to be due to trauma alone. Nor am I at all convinced from an examination of the literature that such cases exist. There can be very little doubt that in certain instances bodily injury and mental perturbation act injuriously in hastening the development of the disease and increasing the rapidity with which it progresses, but that they are, in and of themselves, sufficient to produce the disease has, so far, not been satisfactorily proven.

The experience related by Brasch[35] is instructive in showing how trauma may bring to the front the phenomena of tabes, and how easy it is to mistake the discernible manifestations of the disease for the onset. Incidently it shows that we cannot scrutinize too closely those cases of tabes claimed to be of traumatic origin. A man, thirty-nine years old, who had had a chancre when thirty-five, which was not treated after the general manifestations of the infection had ceased, at thirty-eight suddenly developed squint. One year later he fell and injured the knee. Shortly afterward he complained of parasthesia in the leg, and later of retention of urine and difficulty in walking. The typical signs of tabes were soon elicitable. If the patient had denied a syphilitic history, such as in the following case, this might have been recorded as a case of traumatic tabes.

Müller[36] records the history of a patient who fell from a horse and was stepped upon, causing a fracture of the thigh. Within a year the patient had easily recognized tabes. Close inquiry into his personal history revealed the fact that 10 years before he had had a chancre which was not heeded in any way, and which had practically been forgotten.

Tabes and Heredity.—Heredity as a cause of locomotor ataxia is very differently estimated by different writers. A few claim that there is proof that the disease is directly hereditary, and they cite the cases hereinafter mentioned in which tabes occurs in parent and offspring, in support of their claim. We shall see, however, that a very different interpretation can be put upon them. Almost every writer on the etiology of tabes dwells upon the importance of the neuropathic constitution, which is almost invariably an inherited condition, as an important indirect factor in the development of the disease. Charcot and his disciples particularly are responsible for the propagation of this view. It has been difficult for them to furnish tangible proof of their contention in the shape of clinical histories which set forth that there existed nervous disease in the ancestry or the collateral family of the patient. If by neuropathic constitution one means that the sensory neurons are not endowed with sufficient vitality or vigor to carry them through seventy years of life, then the neuropathic constitution is an indirect cause of tabes, for it is probable that this inherent lack of vital resistance is a condition which, in the majority of instances, allows the noxious agencies developed by syphilis to be operative. But if neuropathic heredity is indicated by the existence of nervous disease in the immediate and collateral ancestry, and the neuropathic constitution is evidenced by the possession of somatic and psychical stigmata, then my statistics do not encourage me in the belief that such heredity has much to do with the development of the disease. In only 10 per cent. has diligent inquiry been awarded with a statement that some of the immediate family or ancestry had affections which entitled them to be classed as neuropathic. This conclusion is in accordance with the experiences of Möbius and of Gowers. The majority of authors, particularly the French and German, still emphasize the importance of heredity.

In 1886, Déjerine[37] said that no case of direct heredity of tabes was known. To-day there are a number of cases (7) on record, in some of which no history or indication of syphilis can be made out. Two by Berbez (loc. cit.), father and son. The latter syphilitic at twenty-five, tabic at twenty-eight; mother and son, the former possibly syphilitic, the latter tabic at twenty-three. Kalischer[38]; mother, fifty-one (developed tabes at thirty), and son twenty-seven, when tabes developed. Goldflam[52]; father, sixty years old, and son thirty-seven, both previously syphilitic. Erb,[30] two cases; father, sixty-nine, syphilitic, son, twenty-three, syphilitic. Father died of tabes, son developed it, no history of syphilis, but he had enlargement of the cervical and epitrochlear glands.

In all of these cases the disease developed in the offspring after maturity, and in the majority of cases there was a history of syphilis. In the case reported by Dydynski (cited on p. 13) tabes developed when the child was five years old. The father had had syphilis when 20, the mother had had five abortions before this child was born. At the time the case was reported the father was developing tabes.

A syphilitic history was made out in all of these cases save Kalischer's, and the occurrence of tabes in parent and offspring may be said to bespeak almost unequivocally the previous existence of syphilis in the parent and its transmission to the offspring or the existence of acquired syphilis in the parent and offspring. There is no genuine case of infantile tabes on record in which syphilis did not exist. I see no reason why in Kalischer's patient, a young man of twenty-seven years, the tabes may not have been due to acquired syphilis. In the case of juvenile tabes in my statistics the patient denies syphilis, but as he was a Russian peasant and began indiscriminate sexual intercourse on his native heath when twelve years old, he is likely to have had syphilis, considering its dissemination in Russia.

These cases, in which tabes occurs in parent and child may be interpreted as examples of direct transmission of the disease, but I think there is little or no justification for such interpretation. It is much more legitimate to look upon tabes in the descendant as an indication of syphilis inherited from the parent, particularly so, as it is certain that tabes is caused by hereditary as well as acquired syphilis. In the vast majority of the cases of hereditary syphilis mentioned above, a history of syphilis was obtained, and in some of the others, in which a history was not elicited, there were collateral inflammations or signs which indicated the existence of that infection. Taking it together, the lesson taught from a study of the cases of the so-called hereditary tabes, is the same as that from a study of tabes in husband and wife, *e.g.*, that syphilis is the cause of these cases.

Tabes and Syphilis.—The real proximate cause of tabes is still unknown. Many agencies have been accused, but one only has been proven to stand in definite relationship to it. Exposure to cold and wet, sexual excesses, occupations that contribute to leg weariness, trauma, alcoholism, poisoning by ergot and lead, the arthritic and neuropathic constitution, have all been enumerated as causes of the disease, but as our experience with tabes has become larger and the natural history of the disease more familiar, we see that one attributed cause, viz., syphilis, stands out above all others. All the others play an unimportant rôle. Still tabes is not a syphilitic disease in the true sense of the word. Neither in its clinical delineation, nor in the pathological processes that constitute the anatomy of the disease is there anything that reminds of, or even suggests, syphilis. Furthermore, tabes is not amenable to antisyphilitic treatment in the slightest degree. In the face of this it must strike the mind which comes afresh to this subject that the assertion regarding its syphilitic origin is almost beyond belief. Yet the statistics of this disease, and the contrast statistics of other nervous diseases seem to show beyond any doubt that tabes follows in the wake of syphilis and stands in direct pathogenetic relationship to it.

Many investigations have been undertaken to determine the frequency with which persons with tabes have had syphilis. Some of the more important of them are set forth in the following table:

MEN AND WOMEN.

Reporter.	No. of Cases	Syphilitic. per cent.	Positive. per cent.	Possible. per cent.
Erb	1,000	90		
Fournier	1,000	93		
Redlich (Vienna)	102	90	80	10
Gowers (1889)	170	69		
Bonar (Starr's Clinic)	286	69	58	11
Thomas (Johns Hopkins Clinic)	111	63	42	21
Kuhn (Jolly's Clinic)	214	75	50	25
Silex (Tabic Optic Atrophy)	54	81.5		
Dinkler (private cases)	37	93		
Halban (Krafft Ebing's Clinic)	236	86	73	13.5
Seeligmann (Fischer's material, Constance)	100	86		4
Motschutkowsky	1,662	71.5	36	35
Guttman (Leyden's Clinic)	111	69	35	34
Thones	48	62-70		
Touche	23	55		
Anfinow	322	81	62.4	20.5
Dana	50	68		
Riley	61	71	48	23
Hirt	247	90		
Nose (Japan)	96	58	48	10
Borgherini	68	69	32	37
Bramwell	155	76	56	10
Collins	130	80	70	10

Strümpell, Déjerine, Raymond, and Hirt state the percentage to be about 90. Mendel, and Senator 75, Seguin 70. Möbius, Drummond and Quinquad and others maintain that all patients with tabes have had syphilis, inherited or acquired. On the other hand, some writers give a very much smaller percentage, for instance, Eulenberg, Motschutkowsky and Mozel give but 36 per cent. Motschutkowsky says that 35 per cent. additional of the patients might have had syphilis, making 71 per cent. Storbeck about 40 per cent. It should be said, however, that Storbeck is a follower of Leyden, who has strenuously combated the view that syphilis is the chief cause of tabes. The statistics of American writers do not show such a high percentage of syphilis as do those of Europeans. In the series of cases published herewith, the percentage of syphilitic infection is considerably higher than that of any other American investigator.

The question of the existence of syphilis in women who hace tabes is most important. At first it was thought that female tabics did not have syphilis as frequently as other tabics, but this has been shown to be not so. It is always difficult to get a history of syphilis in women. The primary lesion is very often undiscovered, the secondary manifestations are frequently very late and trivial and rarely discovered, and again, women who have the disease deny it even in the face of the most overwhelming proof that the disease exists. One of the arguments which the opposition to the syphilitic antecedency of tabes has used is the small percentage of syphilitic histories in female tabics. This view is, however, probably founded in error as the following table tends to show:

TABES IN WOMEN.

Reporter.	No. of Cases	Certain. Per cent.	Probable. Per cent.	Possible. Per cent.	Not. Per cent.
Kron	41	40	12	30	
Nonne	22	77.3			22.7
Silex	8	87			
Fehre	41	66			
Kuhn	78	36	28		
Collins	16	70			

The infrequency of tabes in prostitutes who may be presumed to be highly syphilitic, is one of the arguments against the syphilitic origin of tabes, and although it is one of considerable weight, the explanation probably is that the majority of them have reached their destiny before the age when tabes usually develops. The few that alcoholism and exudative syphilis spare have expiation thrust upon them in the shape of insanity or succumb to intercurrent diseases. The majority are removed from the social ranks in one way or another before full maturity.

I do not intend to discuss in detail the arguments in favor or against the syphiltic origin of tabes, which has been done a number of times in masterly fashion by Erb[40] except to devote a few words to the remarks of Virchow, made on a discussion of the subject, a short time ago,[41] which constitutes the most formidable opposition of recent years. Virchow reiterated then what he had previously said in the same society (Berlin, Gesellschaft f. Psychiatrie u. Nervenkrankheiten) several years before.

Virchow's opposition to the syphilitic origin of tabes seems to be principally on two grounds. First, the lesions of the disease are not characteristic of syphilis. He maintains that when a patient has had syphilitic disease, that there are two pathological features which one rarely fails to find on the autopsy table: some form of gummatous formation and amyloid degeneration. He says that the latter is so common that when anatomists find it they at once look upon the case as one of syphilis. In tabes it is well known that amyloid degeneration and amyloid bodies are rarely found, or if they are, they are found in no greater number than the age of the individual entitles him to them. In other words, as people grow older, amyloid bodies develop in their central nervous system; second, that the statistical method, that has been pursued to prove the syphilitic origin of tabes, is not the correct one. He says (and with truth) that it would be far better to determine how many of the patients who have had syphilis with such constitutional manifestations that no doubt whatsoever can exist as to the reality of the disease, developed tabes. If this method could be pursued it would unquestionably be better than the one which we are compelled to adopt, but as neurologists dealing with the subject of tabes, we cannot determine this without the aid of syphilologists. Everyone knows the unsurmountable difficulty there would be in bringing such an investigation to a conclusion. Tabes develops from five to twenty-five years after the syphilitic infection, and in this time one generation of syphilologists passes away and with them go their case books. In reply to Virchow it may be said that it is not held by neurologists that the disease is syphilitic from the standpoint of the pathologist, on the contrary, an attempt is made to convey the idea that syphilis causes the disease (in some inexplicable way) after the virus has lost its capacity to cause reaction typically syphilitic in the cell, by classifying the disease as parasyphilitic (para, beyond). According to Virchow's own teaching, syphilis does not always cause cellular reaction pathognomonic of syphilis. When statistics are controlled in such an investigation as they are nowadays, almost invariably the frequency with which patients suffering from other nervous diseases have had syphilis being estimated, and contrasted with those of tabes, such statistics speak as much truth as statistics can be made to do. Again it is not so absolutely sure, as Virchow states, that cases of tabes coming to autopsy do not reveal lesions of different parts of the body indicative of syphilis. In 100 autopsies of tabes Westenhofer has seen such lesions 44 times. In reference to the claims of Leyden and his pupils, that their statistics do not substantiate the claim of the importance of syphilis as an etiological factor, it may be said that the testimony and evidence produced by them is not convincing. It is very remarkable that material gathered in the same city and from the same hospital can give such discordant answers to a question as that of Leyden, Silex and Jolly (see statistical table).

In estimating the relative frequency of syphilis in tabic patients, it should not be forgotten that the patient may give a negative answer to the interrogation, without meaning to deceive. He may have had syphilis (1) without knowing it, (2) may have had it and forgotten it, (3) he may have had it and been assured by a medical practitioner that it was not truly specific, (4) he may have had it and denied it wilfully. I have had three cases in which I proved by the physician who treated the patients that they knew they had syphilis, still they denied it. It must also be kept in mind that nowadays it is generally admitted by syphilologists that the point of entrance of the syphilitic virus is not indicated by a typical local lesion, the hard chancre. On the contrary, it may produce reaction at the point of entrance, that is by no means typical of chancre as that term is ordinarily understood. That soft chancre, abrasions, etc., are undoubtedly the portal of entrance in some cases is freely admitted by some.

The frequency with which a history or evidences of syphilis was furnished by my cases leads me to the conclusion, as it has led so many before me, that syphilis must be concerned with causing tabes. As contrast statistics to those of tabes I have taken the histories of 140 cases of nervous diseases without tabes seen in private practice, in which exactly the same inquiries and similar investigation were made to detect syphilitic infection, and I find that there is 8.3 per cent. of this number that may be said to have had syphilis. In other words tabic patients have syphilis 10 times oftener than patients with other nervous diseases (excluding general paresis). In fact, the proportion is much greater than this, for patients with tabes in private practice give a history of syphilis about twice as often as dispensary patients. Despite the inclusion in my cases of tabes of hospital and dispensary patients the proportion is still ten to one.

The dominating rôle which syphilis plays in the etiology of tabes is shown most exquisitively by the occurrence of tabes in husband and wife. The number of cases in which this has been noted is very considerable. And almost every one whose work brings him into contact with large numbers of cases of nervous disease has seen such examples, as well examples of a disease which has practically the same significance regarding its origin, I refer to general paresis.

Brasch[42] has recently recorded the histories of three couples with tabes who came under his observation within a space of three weeks. In the first couple, both had tabes and both were certainly syphilitic. In the second, the husband had general paresis, the wife tabes, and from the history there could be no doubt that both had been syphilitic. In the third couple, the husband had general paresis, the wife tabes and although a syphilitic history could not be definitely obtained, the author properly says that it was very probable that syphilis had existed.

Mendel, who was the first to point out[43] the occurrence of general paresis in married people, stated in discussing the subject[44] that out of 20 couples, in six instances the husband had progressive paralysis, the wife tabes, in three cases the husband had tabes, the wife progressive paralysis, and in four cases both husband and wife had tabes. He cites another instance that is particularly instructive, in which the husband infected his wife. The husband died from general paralysis, the wife married a second time, the second husband developed tabes, and at the time when Mendel reported the case, examination of the wife showed Argyll-Robertson pupils, and loss of the patellar reflexes indicating an organic disease of the nervous system, either tabes or general paresis. Other cases of tabes in husband and wife have been reported by Kron, two,[45] Lalou, two,[46] Trevelyan,[47] Ingelvans,[48] Pearce,[49] Turner,[50] Ormerod,[51] Goldflam,[52] Luhrmann,[53] Erb,[54] Mönkemöller,[55] Gottschalk,[56] and Nonne[57].

These cases bespeak the importance of syphilis in the etiology of tabes, and their occurrence constitutes one of the most important supports of the theory that tabes is due to syphilis. Taken in connection with information to be had from a study from the cases of so-called hereditary tabes, it shows that locomotor ataxia is due to syphilis.

The Effect of Anti-syphilitic Treatment in Preventing Tabes.—The effect of full anti-syphilitic treatment, *i.e.*, the treatment which is considered by syphilologists to-day to be adequate to cope with the disease, in preventing and delaying the development of locomotor ataxia is a question that has interested me for a number of years. Six years ago I made a statistical study to determine whether or not such treatment delayed or prevented diseases that follow in the wake of syphilis. The conclusion then reached was at variance with the commonly accepted belief, so when the article was written I contented myself with a statement of what the statistics seemed to show. This was, that patients who had been treated for syphilis in the most orthodox way developed locomotor ataxia a little earlier than those who have taken antisyphilitic treatment. This paper* has apparently not come to the knowledge of many writers, for I rarely see it referred to in the literature. Some investigators, however, who have been led to consider the point (Thomas) and have corroborated my findings. My investigations on this point, in this series, are corroborative of the conclusions reached in my studies six years ago. "In private patients in whom antisyphilitic treatment was carried out fully, tabes developed earlier than in hospital patients in whom the length of treatment was little more than three months. The study of the 26 cases of tabes in which syphilis was denied is most instructive. They developed tabes a little later in life than those who had had antisyphilitic treatment." In truth, it was from consideration of facts such as these that it became evident that tabes must be taken out of the category of purely syphilitic diseases and as the studies of the pathologist showed that the disease was not characterized by lesions typical of syphilis, the parasyphilitic theory of the disease was suggested.

The Pathogenesis of Tabes.—How syphilis produces locomotor ataxia is a question to which a satisfactory answer cannot be given at the present time. That the changes in the sensory neurons and other structures constituting the morbid anatomy of tabes is not the reaction of these cells to the syphilitic virus or syphilitic organism, whatever the cause of syphilis may be, is made certain by the fact that in the vast majority of cases this virus produces a reaction in cells of all kinds, that is fairly characteristic, and more or less uniform. The true lesions of locomotor ataxia have nothing in them that suggest such reaction. The most plausible theory that has been so far suggested to explain the modus operandi of the syphilitic poison in producing tabes is, that during its existence in the system there is developed a toxin similar in some respects to those of other infectious diseases dependent upon specific organism, such as diphtheria, which in most instances the economy contends with successfully, but which in others exercises an injurious effect upon the central sensory neurons particularly at their origin to cause the disease locomotor ataxia. Why the posterior columns of the spinal cord should be selected for the pernicious activity of the toxin in some cases and not in others, must be explained according to the laws of vital resistance. If they are predisposed to disease by heredity or by experiences which have exhausted some of their vital resistance, it will readily be seen that this may constitute the predisposing cause.

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* Read before the American Neurological Society in 1896, published in the "Post-Graduate" of the same year.

The Etiology of Tabes. Summary.—In truth all that we know of the etiology of tabes may be said in a line: it occurs in civilized, mature men and women who have had syphilis, and in children who inherit syphilis. Why it occurs we do not know. We know that it follows in the wake of syphilis because the vast majority of the patients we see with it give a direct or indirect history of that disease, or unequivocal manifestations of it. Knowing how widely disseminated syphilis is, and how frequently nature (aided by medication) is able to overcome the poison, *i.e.*, how often syphilis is cured, we marvel why the few are chosen for tabes and the many are spared. In our perplexity we search the entire clinical horizon for a cause. One assumes it is an inherent weakness of the sensory neuron, an abiotrophy (to use Gowers' term) of these cells, and inherited condition; or an acquired weakness brought about by excesses known to be injurious to highly developed nerve-substance and by mental and physical fatigue, particularly the latter. But exhaustive and critical study of our cases does not justify the assumption. Others maintain that exposure, chilling, or injury, are the causative factors that alter the resistance of the sensory neurons, so that the real cause of the disease may become operative. Study of our cases, however, does not support this view, and so it is that we are led to the statements contained in the first sentence of this paragraph. I do not mean to deny that tabes may and does occur more readily in persons whose sensory neurons are so constituted from heritage or acquisition that they are susceptible to pathological irritation. Very likely they do, but this has nothing to do with the cause of tabes. The men who write the poetry, paint the pictures, or make the laws of a nation, are more highly organized, sensitive and irritable than the men who do not, but irritability does not cause genius.

The clinician has shown that tabes is due to syphilis, *i.e.*, follows in the wake of syphilis. The bacteriologists must discover the cause of syphilis, or if it has been discovered, corroborate it, and cooperating with the physiological chemist, discover the immediate cause of locomotor ataxia —and of general paresis.

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Reception to Dr. Manley.—Dr. Thos. H. Manley, of New York, was tendered a reception by the medical profession of Hartford, Conn., at the Hunt Memorial, Monday evening, Dec. 22, and he gave a lecture on "Stenotic Obstructions of the Large Intestine." The following day, on the invitation of the Medical Staff, he operated at St. Francis' Hospital.

A CASE OF SUPERNUMERARY BREAST IN THE AXILLA OF AN ADULT MALE.*†

BY FREDERIC GRIFFITH, M.D.,
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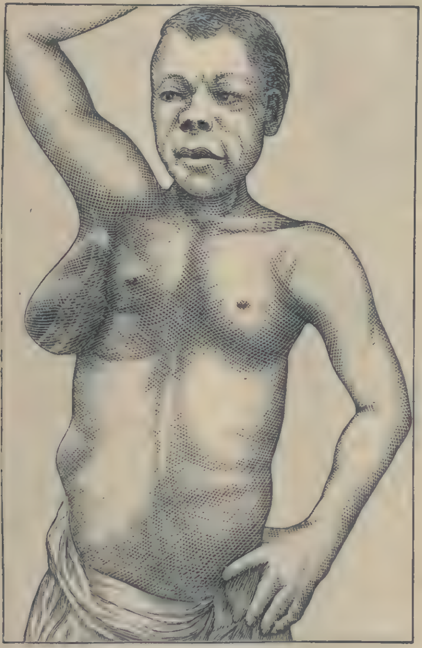
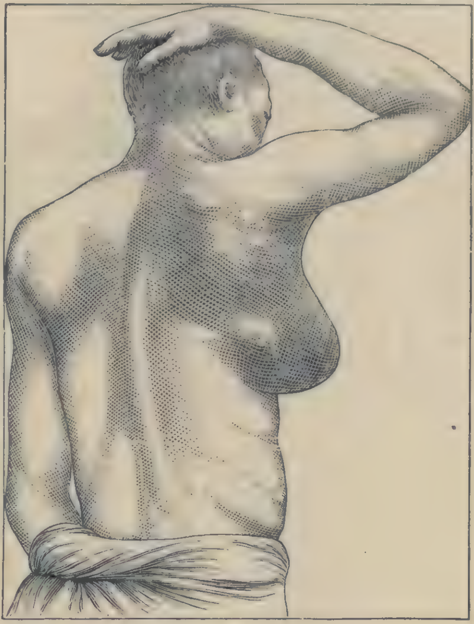
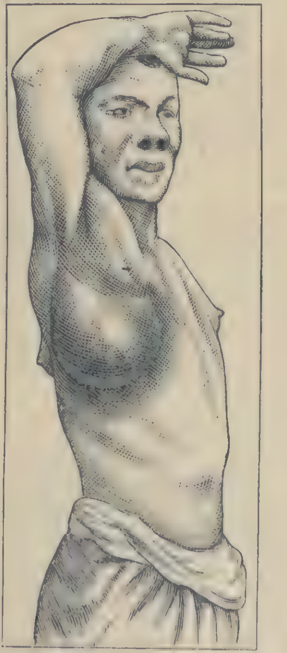
FELLOW OF THE NEW YORK ACADEMY OF MEDICINE,

THE photographs and history of this case were obtained in March, 1902. Yappa is a Bushman, a well developed, muscular male aged twenty-five years. He is married to six wives and has a number of children. He is the assistant head-man in the village of Sappaley in the interior of the Niger Protectorate, West Coast of Africa. When taken Yappa was in charge of slaves loading vessels in His Majesty's transport service on the Guinea coast. Though in superstitious dread of the white doctor a bribe in the shape of two bottles of gin (current coin equal in value to 50 cents) loosened his tongue and permitted the use of the "black box" after other photographs had been shown and adequate explanations made.



The anomally has existed since the age of fifteen, puberty is reached in the male child of this region at the age of ten years. Upon inspection and palpation the tumorous appendage is found to extend down from the right axillary space between the third and seventh ribs. The base is oval and is bounded in front by the outer border of the great pectoral muscle behind by the latissimus dorsi and extends to below the inferior angle of the scapula. Freely movable, it has the typical doughy feel of the female breast. Handling and work do not cause pain or discomfort and active movements of the arm are not impeded by the tumor bulk. The nipple is erectile, well formed and stands out prominently upon its areola, posteriorily below and to the outer side of the inferior angle of the scapula. Nipple and areola are somewhat lighter in color than the surrounding skin. The normal nipples are likewise prominently placed at their usual sites over the pectoral muscles. Manipulations and milking of the breast demonstrated that there was no fluid present or connecting opening through the central nipple pore. An offer to remove the anomaly was scornfully refused and it was developed that far from being a useless appendage the super-





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* Presented at the New York Academy of Medicine. Nov. 10, 1902.

† It is through the courtesy of Dr. James F. Donnelly, Colonial Surgeon in His Majesty's Royal Army Medical Corps, on duty in the Niger Protectorate, West Coast of Africa, that I am enabled to present the history and fine photographs of this rare condition in the human male.

numerary breast was of distinct personal value, for its possessor was held in awe by his less fortunate fellow tribesmen.

A review of the literature fails to show any well-authenticated case of axillary breast development in the male. Roger Williams, who has tabulated the cases of supernumerary breast development, writing previous to the year 1894, says of this anomaly that "in animals axillary mammæ are most exceptional, but they are met with in the pteropi (fruit bats) and in the galeopithecus or flying lemur;" and of humankind he says further, "While I have found on record numerous instances of so-called axillary mammæ in the female, when one comes to examine these cases critically only a very few of them can be definitely accepted as such; most of them are of the nature of axillary mammary extensions or sequestrations. I have not met with a single instance of the kind in a male."

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THE DIURETIC ACTION OF RECTAL IRRIGATION. THE SPECIFIC ACTION OF NORMAL SALINE SOLUTION IN THE PRODUCTION OF DIURESIS.*

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BY courtesy, I have been invited to discuss the topic "Puerperal Eclampsia;" especially that portion of Dr. Stewart's paper referring to the diuretic effect of rectal irrigation. Of the general employment of water as a diuretic, it is unnecessary to speak. It is my chief intention to call to your notice the fact that normal, or more correctly speaking, deci-normal, saline solution, has a specific effect on the kidney cells, in promoting diuresis and that this occurs, whether the solution is administered by infusion, by hypodermoclysis or by enteroclysis. It occurs, even when such small quantities are employed that the attached mercurial manometer demonstrates no increase in arterial tension. It takes place even when the renal nerves are sundered.

Foster's experiments regarding the diuretic effects of small infusions were duplicated by me in the physiological laboratory of the College of Physicians and Surgeons. I furthermore experimented with hypodermoclysis and with enteroclysis, and in regard to the latter, I will give a brief description of the method employed.

On one side of a dog was placed a small vertical standard with a lever bearing a spatula at the end. The left ureter having been catheterized, drops of urine pass through a tube and fall upon the spatula. The impact of every drop is registered on the smoked paper of a kymograph, by means of a tambour, an ingenious mechano-pneumatic transmitter. Each trace of a urine drop appears like an inverted V. The urine from the catheterized right ureter was carefully collected and measured, at stated intervals. The mercurial manometer, attached to the carotid artery, noted the heart impulses, on the revolving drum of a kymograph.

It was necessary to demonstrate the period when absorption from the intestine occurred and when the diuretic action began. One quart of a normal saline solution, plus five c.c. of a five-per-cent. solution of ferrocyanide of potassium, were employed, through a recurrent irrigator; the returned fluid being caught and used over again. The urine was tested every minute with chloride of iron. In 20 minutes, the Prussian blue reaction appeared, thus demonstrating the average rapidity of absorption from the intestine and the period when renal secretion begins.

Furthermore, either a small enema, or an enteroclysis with the above solution at 99° to 100° F., would increase the number of drops of urine, registered on the kymograph, synochronously with the Prussian blue reaction to the iron test. The manometric tracings showed no rise of pressure, the increased secretion being due to the specific action on the kidney cells.

I report one unique case of oliguria; the average quantity of daily urine 14 ounces, enemata of nine ounces of normal saline solution, in three-ounce divided doses, hourly for three hours—the patient being unable to retain a larger quantity. Result, forty ounces of urine in eight hours, thus demonstrating the action of a small enema on the kidneys.

The second important effect produced by normal saline solution, to which I would direct your attention is, that it will diminish acute renal congestion. Experimentally this fact has been demonstrated by me and reported at the New York Academy of Medicine, in a paper entitled "The Treatment of Scarlatinal Nephritis." Clinically, it will diminish acute renal congestion by any of the three methods noted.

We have frequently seen profuse diuresis and the gradual disappearance of albumin, casts and blood, the increase of urine commencing in 20 minutes (the interval of absorption) at all temperatures of the irrigating fluid. Cold irrigations, we would state, are only temporarily stimulant, then depressant and when continued, on account of the depression and ultimate shock, decrease the quantity of the urine. We consider them dangerous in kidney conditions.

With the irrigating fluid at temperatures of 110° to 120° F. there are two cycles of increase of the urine, while from the lower degrees of temperature there is but one. In the first instance there is an average point of maximum stimulation at the end of ten minutes, corresponding to the general increase in the circulation, and an earlier diuresis, in addition to the usual later diuresis from absorption of the fluid. In uremic conditions the high arterial tension is due to toxemia and the tension of the renal vessels is proportionately greater than that of the general circulation. Hot enteroclysis would aid in re-establishing the proper circulatory relations. It imparts a certain degree of warmth to the kidneys, by contiguity and, in addition, temporarily raises the temperature of the blood in the iliac vessels from 0.5° to 0.8° F.; in effect an active poultice. We have demonstrated this experimentally, as well as clinically.

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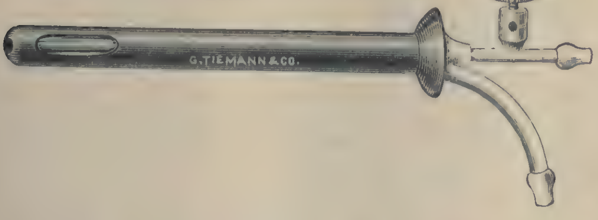
* Discussion of Dr. D. H. Stewart's paper entitled "Puerperal Eclampsia, its Surgical Treatment," read before the West End Medical Society, Nov. 1, 1902.

The clinical experiences of Drs. William H. Thomson, Simon Baruch and others, as well as my own, establish the fact that even with high arterial tension, though there may be an evanescent increase due to the higher temperatures of the solution, yet irrigation at 110° to 120° F. causes a profuse diuresis, diaphoresis and bowel action, followed by a rapid fall of pulse tension and a marked improvement in the condition of the patient. I would advocate continual enteroclysis at 110° F., gradually increasing to 120° F.

The old method of allowing the patient to void the fluid about the single long enema tube, is both uncleanly and inaccurate. Moreover, the adult rectum is eight inches long—the sigmoid flexure 17½ inches, and after allowing, for the sphincters and space for insertion of the tip of a fountain syringe, a rectal tube nearly 30 inches long would be required, to pass through the sigmoid and reach its junction with the descending colon. I merely state anatomical facts, yet how often do we hear the fallacy described, of passing the colon tube well into the descending, or even into the transverse colon? On the other hand, the infant sigmoid lies only three and one-half inches from the sphincter. In the adult, the five inch irrigator combined with elevation of the hips, is efficacious for a high irrigation.

The advantages of the double current irrigator are that the temperature and quantity of the solution can be definitely regulated and that the continuous heat can be kept up. One can improvise a recurrent irrigator by means of two catheters passed through a perineal pad.

Many double-current irrigators have been devised, such as Bodenhamer's, Skene's, Tuttle's, Chetwood's and others, in all I could describe about 20 varieties. We present, however, our latest instrument, which is simple in construction and is readily cleansed. You will observe that it is furnished with a binding pole. This is for electrical enteroclysis in post-operative intestinal paresis, or in chronic constipation.



Now, as to method: Place the patient in the dorsal position—foot of bed slightly elevated. Discard the bedpan and protect the bed by rubber sheeting. Drain by a carry-off tube into a pail. The outflow tube must be pinched, as its caliber is larger than the inflow; otherwise the fluid would not pass up the bowel.

Employ from three to 12 gallons at a sitting, from a pint to a quart being kept continuously in the bowels. It is well to empty the lower bowel by enema before the first irrigation. If this is impossible, the irrigation itself will produce the result desired. The irrigations may be given every two to three hours, if necessary, in severe cases, as in threatened suppression of urine. The amount of fluid absorbed during irrigation, varies, depending somewhat on whether previous bowel action has occurred and also on the circulatory conditions. In any event, absorption of the fluid and stimulation of the kidneys occur.

In a case of Dr. William H. Thomson's 13 quarts of normal saline solution were employed as a standard at each irrigation; the fluid was measured after irrigation and deducted from our standard quantity to show the amount absorbed. In addition, to eliminate error, all material passed from the bowel within an hour after irrigation, was also deducted. These tests were carried on every day for three months. This patient on one occasion absorbed three quarts, several times, two quarts and quite frequently 1½ quarts. The general average was about one quart out of 13.

In a second case the urine increased from 18 ounces daily to 125 ounces, after irrigation for four days—enteroclysis having been given three times daily. In a case of oliguria with double pleurisy with effusion in a patient of Dr. William H. Thomson's, the daily quantity of urine being 12 ounces; after the employment and failure of various drugs—diuretics and diaphoretics; with rectal irrigation alone, in the space of four days—the urine increased to 40 ounces a day and in two weeks it rose to 70 ounces in the 24 hours and the effusion on both sides had disappeared.

In conclusion, let me say that I have endeavored to impress upon you the great value of the procedure of scientific rectal irrigation as a diluent of the blood and a prompt producer of diuresis, diaphoresis and bowel action. Furthermore, I fully endorse what Dr. Stewart has emphasized, the fact that you cannot afford to wait with folded hands for any slow or uncertain results in such a disease as puerperal eclampsia, when the maternal life chances are only about one to two and the child's risk is about even. With frequent small venesections combined, with properly administered irrigations you may turn the scale in your patient's favor in one-half hour; 10 minutes for the venesection and 20 minutes for diuresis to follow the enteroclysis. In addition, it would suggest itself to us that an infusion of normal saline solution at 120° F., the correct temperature as demonstrated by Dr. Dawbarn, given at the site of the venesection, might prove of the greatest value.

The administration of hypodermoclysis is also a rational treatment.

HEMATOCELE.

BY W. C. BOWEN, M.D.,
OF BELTON, S. C.

HEMATOCELE comes under the head of Minor Surgery, but by no means should it be considered an insignificant matter, as it involves the neighboring parts of one of the vital points of human anatomy, viz.: the testes.

We will observe in the first place its origin: it may be from heavy lifting,—an unusual strain, or a spontaneous rupture of a blood vessel ramifying the tunica vaginalis or the cord. We will note that we have two kinds of hematocele, first of the cord, second of effusion of blood from a ruptured vessel (generally a vein) in the tunica vaginalis. Of the tunica vaginalis we have an enlargement of the testis with the effused blood pointing upward following the cord. These enlargements from the ruptured veins are of no little concern to the patient nor are they of such a small matter to the surgeon. The patient comes with much anxiety to his physician and at times with a history of quite a good deal of pain, and in a decided majority of cases of uneasiness as well. You inquire into his daily habits. Should you discover that severe physical labor is the only reason he gives you, you then set about to differentiate between hydrocele and hematocele. What should you do? First find out if your patient was ever tapped for hydrocele, then, if he has been, find out if it is another hydrocele; or when you have a hematocele from the tapping of hydrocele. Place your light well behind the scrotum, and if the fluid is transparent you certainly have another hydrocele; if not transparent, you can safely tell your patient that another trouble has started up, viz.: hematocele. Should the hematocele be caused by injury there will be a sudden snapping of the vessel and a rapidly filled tunica vaginalis if allowed to stand any length of time; the tumor may become hard from the inflammation set up by the blood acting as a foreign body. The testicle will generally (upon examination) be found in the lower posterior part of the sac. We will sometimes find that the fluid has become cartilaginous. In making the diagnosis, we should rely upon the history. Hematoceles as a rule do not remain quiet and are less troublesome than hydroceles.

A hydrocele may lie quiet for years without any apparent discomfort to the patient, not so with hematocele. As time rolls on it will begin to find a place for an outlet, and herein lies the most important point in making an early diagnosis and relieve the affected part at once. Quite often the source of blood is rather difficult to understand, especially with a perfectly healthy testicle. After an operation for hydrocele we may have a hemorrhage on the tunica vaginalis which flows inside and consequently fills the sac, or we may have a slight bleeding from one of the vessels of the organ itself. There is one case on record where the trouble came from a wounded spermatic artery, and, in fact, Sir A. Cooper had a case where there was a distinct rent in tunica vaginalis.

Treatment.—The hemorrhages either in the tunica vaginalis or cord are to be treated alike and in the same way as hemorrhages in any other part of the body: first applying ice packs alternated with hot lotions and leeches, elevating the scrotum and perfect rest. Should the hematocele remain the same for some little time, tap with your trocar. Very often rest and ice bags will cause the blood to be absorbed. Try everything at your command, but by no means excise the organ.

WHY CHLOROFORM SHOULD BE USED IN PUERPERAL ECLAMPSIA.

BY DOUGLAS H. STEWART, M.D.,
OF NEW YORK CITY.

SUGAR is an antiseptic. If any man should doubt this it is not necessary to make a small figure and refer to Lauder Brunton. Let him consult with that best of authorities—his own wife—who will demonstrate her experiments, not with the test tube, but with the preserve jar. And if there should still be doubt as to the "keeping" properties of glucose (dextrose) he might investigate some "strained honey." If unconvinced, after the above, let him take two test tubes full of urine and adding glucose to make a two-per-cent. solution in one, leave the other as it is. Then test the two tubes daily for the alkaline reaction. It will be found in the ordinary urine at least six days before it is present in the glucose solution, the interval being varied with the temperature, that is, inversely.

It is the general opinion that the alkaline reaction in decomposing urine is due to the production of carbonate of ammonia and we know that one of the many elements in the toxemia of puerperal eclampsia is the changing of urea into ammonium carbonate. This salt is demonstrable in the feces in eclampsia and it is the result of the principal change in that complex blood poisoning which by its effects on the nervous system gives rise to the convulsions which are so characteristic.

Many physicians know that chloroform controls those convulsions better than ether. It is also well known that chloroform produces a temporary glycosuria. And if we have glycosuria, is it at all far-fetched to assume that we must have glucose (dextrose) in the blood? If we admit the presence of this sugar in the blood we can easily demonstrate by our test tube that it does prevent the changing of urea into ammonium carbonate. No doubt every physician will bear me out in the statement that while severe grades of diabetes are often complicated by grave forms of renal disease; uremic convulsions are very rare. Perhaps the reader, like myself, has been surprised that in a diabetic all the conditions may be apparently right for a convulsion, but it never occurs unless there is an epileptic history.

Admitting the above, does it not seem that chloroform with its accompanying glycosuria is the anesthetic par excellence in puerperal convulsions? Not that it will inhibit the development of all the poisons in the toxemia; but it will limit the production of the chief one.

121 West Eighty-eighth Street.

MEDICAL PROGRESS.

GENITO-URINARY AND SKIN DISEASES.

Dependence of Skin Affections upon Nutritive Disturbances.—Some time ago the statement "that skin affections are due to nutritive disturbances producing a lithargic condition of the skin, an inefficient stimulation of the nerve twigs" was made by W. R. I. DALTON (N. Y. Med. Jour., Nov. 1, 1902). He believes that bacterial agencies cause septic and putrefactive changes in the alimentary canal and that the toxins thus developed exert a selective action upon the primordial protoplasmic group of cells. In order to diminish, so far as possible, the conditions favorable for the growth of micro-organisms he insists upon a movement of the bowels every day, an abstinence from alcohol or malt beverages, a denial of all sweets and meat for six weeks, although fish and eggs may be taken. Water should be drunk frequently, especially before breakfast. A tablet, to be taken after meals is compounded as follows and seems to have a very desirable effect in meeting several of the indications:

℞	Naphthalin	gr. j
	Ipecac	gr. ss.
	Charcoal (willow)	gr. jss.
	Calomel	
	Strychnine	
	Pilocarpine	aa gr. $^{1}/_{100}$

Ft. tabella ad capsula j.

Ordinary Soap in Sweating of the Feet.—This condition is exceedingly annoying to the unfortunate who is the victim of it. G. A. STEFANOVSKY (La Sem. Méd., Oct. 22, 1902) has found the following procedure to be of value. The feet are first washed in ordinary water, and the soles, from which the worse sweating usually proceeds, are lightly rubbed with a piece of ordinary soap, softened in water. After a few minutes, when the lather of the soap is almost dry, the stockings and boots are put on. This treatment must be repeated three times a week. By degrees the washing with which the first treatment was begun may be decreased, and finally, omitted. This observer has used this procedure in some 20 cases of hyperhidroses plantaris, of which three presented maceration and ulceration. In all, within a short time, the quantity and foulness of the secretion decreased. The application of the soap produces a pleasant sensation of moisture and softness. It is recommended as a simple and efficient means of curing this socially inconvenient condition.

Clinical Study of Nail Disease.—Until the publication of Heller's monograph there was no single work which covered the whole pathology of nail disease. In connection with Heller's work a clinical study of 485 cases of nail disease by C. J. WHITE (Bost. Med. & Surg. Jour., Nov. 13, 1902) assumes an unusual degree of interest. Six conditions provide 404 out of the 485 examples of pathological nails. Eczema is a prolific cause. The changes observed in this disease may occur in the nail walls, matrix, bed and plate. In the acute form the nail walls are red and swollen, the plate loses its normal convexity, pain is felt in the bed, the luster vanishes, discoloration is present and soft spots appear which later form minute punctate depressions. The pathological changes consist in the formation of eleidin and horny matter rather than the normal nail substance, together with edema and cellular infiltration about the vessels of the corium. Trauma or felon are two accidents which frequently befall the nails; if the matrix is affected the nail is permanently changed. The commonest deformities are transverse depressions, vertical ridges, hyperkeratosis subungualis and discoloration. Paronychia is an acute or subacute process, and usually occurs in women who wash dishes and scrub floors, but any constant irritation may produce this local disease. The most common nail changes are discoloration, transverse depressions and hyperkeratosis subungualis, with its usual sequelæ. These consist in lifting of the plate and subsequent discharge of the keratosic granules from the bed, leaving a flat, horny floor covered by a thin, dome-shaped roof. In cutaneous psoriasis the involvement of the nails is relatively much commoner than is the rule in eczema. This disease can exist alone in the nails, but the diagnosis is truly hazardous. The condition is most frequent in men and between the ages of twenty and forty. Unna and Heller regard the appearance in the plate of round, punctate depressions as pathognomonic of psoriasis, but White states that this condition is found also in eczema of the nails. His experience showed the commonest lesion in psoriasis to be the advanced changes subsequent to hyperkeratosis of the bed. Two other common lesions are yellow to dark-brown discoloration and transverse depressions. Noxious occupations produce the condition known as dermatitis professionalis; the common symptom is koilonychia. Syphilis of the nails is a rare condition; the local manifestations vary with the stage of the disease. Tinea favosa and tinea trycophytina of the nails are rare conditions; the plant attacks the distal end of the bed and produces an opacity and discoloration which spread backward. Eight cases of tinea favosa were observed in Russian Jews. In the various diseases just enumerated diagnosis can rarely be made without the aid of the microscope, unless the skin is also attacked.

Lupus Erythematosus.—From a study of 71 cases of this disease, J. H. SEQUEIRA and H. BATEAU (Br. Med. Jour., Oct. 25, 1902) conclude (1) That it is due to a circulating poison or toxin; (2) that in its acute disseminated form it is associated with tuberculosis in the majority of cases, but that in the discoid form this association is much less apparent; (3) that the occurrence of albuminuria is part of the toxic effect in acute cases; (4) that the toxin acts through the vasomotor system as the areas are so constant; (5) that local irritation and a poor peripheral circulation sometimes determine the site of lesions.

Urinary Neuropathy.—Epidural injections of artificial serum in the treatment of urinary neuropathy is the subject of a note by F. CATHELIN (La Sem. Méd., Nov. 5, 1902). The good effects which Albarran and Cathelin obtained in incontinence of urine from various causes, by means of one or several epidural injections of a solution of cocaine or more simply, of a physiological solution of chloride of sodium led Cathelin to try the same methods in those conditions which Guyon has designated by the new name of false uremia, and which without having appreciable organic lesion of the urinary apparatus, present most frequently symptoms of psychic origin. The experiments which he instituted were carried out on cases of pollakiuria diurna, impotence, nocturnal pollutions, false urethritis, false cystitis, false prostatitis, etc. His results were uniformly good, and a number of his patients were discharged cured. He injected only artificial serum in doses of 15 c.cm. He assumes that the action of these injections may be due to the vertebral traumatism, or to the influence of arrest upon the centers of the medulla, especially those which control the bladder, anus and sexual organs.

Lavage Under Pressure of the Urethra in Nonspecific Urethritis.—According to the experience and judgment of ORLIPSKI (La Sem. Méd., Nov. 12, 1902) copious lavage of the urethra under pressure, to which resort is ordinarily not had except in specific urethritis are equally advantageous in other inflammations of this passage, particularly in spermatorrhea, prostatorrhea, occlusions and nocturnal incontinence. Spermatorrhea is usually caused by inflammation of the posterior urethra of chronic type, or by weakness of the ejaculatory ducts, and is most frequently invited by abuse. The same factors appear usually in prostatorrhea. Usually lavages of the urethra appear to exercise upon the muscular tissue and elastic tissue about these ejaculatory ducts in the prostate and about the seminal vesicles a strong tonic action, by the joint irritation of mechanical, thermol and chemical means. Similarly it appears that these irrigations cure the very condition which is the cause of all the trouble. In most of his cases a very rapid cure is obtained in 15 days, even when they had proved themselves rebellious to other usual forms of treatment. As a precaution it is advisable to repeat the treatment after a few days of rest in order to avoid relapses. The lavages are repeated regularly once a day, and in the worst cases, twice a day. The temperature of the fluid injected may be warm or cold, provided there is a distinct difference between its temperature and that of the body. The same irrigations he has found to be very efficacious against pollutions, which appear for the most part to be due to the presence of hypertrophy at the prostate. They tend to quiet hyperemia, hyperesthesia and other conditions of the deep urethra. It is advisable to begin these irrigations at a temperature of the body and gradually decrease it, perhaps, by eight degrees. It appears unnecessary in these cases to add any medicine. Incontinence of the bladder has yielded very well to the same treatment in cases which had defied faradization.

Gonorrheal Ophthalmia.—Among the possible sources of gonorrhea of the eyes in children, wearing apparel from adults must never be forgotten. A case in which affection appeared to have come from a kid glove is reported by F. GRIFFITH (Jour. Cut. and G.-U. Dis., Dec., 1902). A boy, aged eight years, while at play in the street found a lady's kid glove, which he put on and continued to wear in his play during the rest of the day. From rubbing his face the child's left eye became infected, and at the end of 24 hours inflammation had closed the lids. Owing to ignorance of the seriousness of the infection on the part of the boy's mother, home remedies were employed until too late to repair the damage. The child was brought to the hospital, where it was discovered that ulceration and sloughing of the cornea had destroyed the sight. Treatment at this stage could do little save to protect the sound eye from further danger of contamination from the profuse purulent discharge coming from the infected orbit. Later the shrunken distorted organ was removed. The danger which the gonorrheal patient becomes to himself and to those with whom he comes into contact must be ever borne in mind by the surgeon, the present instance serving to make this more impressive.

Herpes Zoster.—A case of zoster of the eleventh dorsal root, followed by a general herpetic eruption, part of which was segmental in distribution, is reported by C. J. ALDRICH (Jour. of Cut. and G.-U. Dis., Dec., 1902). The man was thirty-two years old, married, commercial traveler, of powerful athletic built, with good family history, and without any previous severe illness excepting gonorrhea and possibly syphilis five years ago. On August 10 he was in Minnesota and had been fishing and swimming in a lake; soon after this he began to feel a sensation of general malaise, chills, fever and aching pains throughout the body. On August 13 he was attacked with severe pains in the back and loins in the area of the cutaneous distribution of the eleventh dorsal segment. The pain soon became extreme and in 24 hours a rash appeared in that region. After this the pain seemed better, but the rash became very tender to touch. When the author saw him on August 18 he was suffering a great deal of pain. The doctor's diagnosis of herpes zoster was confirmed. It was of bright pink color, confluent, sensitive and painful. The patient was taken to the Cleveland General Hospital, and about August 20 developed a typical herpetic eruption of very extensive distribution. There was a cervical distribution which was sufficiently marked to be accurately followed, but elsewhere it was diffuse and followed no segmental lines. The second eruption was not preceded or followed by any constitutional disorder, running the course of ordinary herpetic eruption, and, besides appearing on the surface of the body, was found on the conjunctival, buccal and labial surfaces.

Fingernails.—The clinical aspect of the treatment of some rare affections of the fingernails was the subject of a paper by F. J. LEVISEUR (Jour. of Cut. and G.-U. Dis., Nov., 1902). He especially calls attention to an affection of the nails which is of parasitic origin, though not due to any well-known vegetable parasite. The following are the points he offers: It has been seen only in adults, where it is usually found in combination with seborrhoic eczema and pruritus ani or scroti. It attacks the nail-plate primarily, starting from the region of the lunula, and very quickly spreads all over the nail. The individual lesions are minute, round, shallow holes of the size of a very small pinhead, arranged sometimes in regular concentric lines. The entire surface of the nail-plate is covered with them. When the disease starts on its way to recovery the lesions slowly disappear, beginning at the proximal end. The nail is not shed, but the clearing-up keeps pace with its physiological regeneration. The affection somewhat resembles that described by Hebra, Lailler and Schutz (état pointillé des ongles—thimble-nail) which was found to be a characteristic and early symptom of psoriasis. But it never begins, like the latter, with bright red points, hyperemic in character on and around the lunula. The individual lesions are of much smaller size. Furthermore, he has never seen it together with psoriasis elsewhere on the body. On nine cases, which he has collected so far, three were physicians, one a lawyer, one a waiter, two women occupied with ordinary housework, and two business men. The men's attention in every instance was called to their diseased nails by the absence of the natural gloss of the nail-plate, giving it a disagreeable, dirty appearance. Five cases had a seborrhoic eczema, some on the scalp, some on the body, or both. In one male case there was present a seborrhoic eczema of the scalp and body, and pruritus ani. The women, who were dispensary patients, hardly knew of the presence of this affection. One woman had general pruritus; the other was to all appearances free from any skin affection. As a rule a number of fingers are attacked. In one case it was only the thumb of one hand. The disease has no tendency to appear symmetrically. Frequent manicuring or vigorous therapeutic measures aggravate the condition and often obscure its true character by producing an eczema of the surrounding skin. If an alkaline solution is applied to the diseased nails, they are liable to assume a dirty brown color. This is particularly the case after an application of liquor carbonis detergens, the discoloration remaining for a surprisingly long time. As stated above, a microscopical search for vegetable parasites was futile. In regard to treatment, he has found that salves do not make any impression upon the disease. In four cases a cure was effected by the use of a one-per-cent. solution of permanganate of potash. The fingers were bathed for 10 minutes twice a day, and the discoloration due to the permanganate then removed by a second bath consisting of a two-per-cent. oxalic acid solution.

Renal Damage and Phloridzin.—Many authors have, up to the present time, been in the habit of testing the functional activity of the kidneys with phloridzin, and have been emphatic in their assurances that the drug caused no damage; von Kossa, Sellig, Hartogh, Schumm and others have found that in rabbits and dogs disproportionately large doses cause albuminuria and degeneration of the kidney epithelium, with hemorrhage. That a dose of phloridzin in man, of only 5 mg., subcutaneously, may cause damage to the kidneys is recorded by O. PILECKE of Berlin (C'blatt. f. Krankh. der Harn- u. Sexual Organe, B. 13, H. 10). This is an important observation, both on account of the authority of the report and of the fact that this is the only example of this trouble he has observed in upward of 100 cases in which he has used the drug. Evidence is therefore cumulative, that he has correctly observed the cause of the trouble.

OBSTETRICS AND GYNECOLOGY.

Gangrene and Spontaneous Elimination of a Large Myoma.—The symptoms which the following case of this rare disease presented will be of general value. It is reported by J. SCHMAUCH (C'blatt. f. Gyn., Nov. 8, 1902). The woman was forty-three years old; bis gravida, with a history of regular menstruation every 22 to 25 days persisting eight days, with considerable loss of blood. For the past four years her periods were marked by the appearance of shreds and great pain in the lower part of the abdomen, but no physician was ever consulted. On account of persistent watery discharge, the patient sought relief in February, 1902, at the clinic. The examination showed a person of medium height, very pale, only 30 per cent. hemoglobin, with normal temperature, presenting at the level of the navel a hard, large tumor, easily displaceable to the side, and apparently consisting of the enlarged uterus. In the vagina there was a bad-colored and foul-smelling watery discharge in which various shreds were mixed. The cervix was almost obliterated and opened to the size of a half dollar, with a thin margin, and presenting in the opening a soft, smooth mass, feeling somewhat like the bag of waters just prior to rupture. The mass was free within the cavity of the uterus. The diagnosis was therefore quite easy that a necrotic detached myoma was present. The treatment consisted in the removal, piece by piece of this mass from day to day, so that in three sittings about 400 grams by weight had been taken without any bleeding. Microscopical examination confirmed the clinical diagnosis. The after-treatment consisted in douches of bichloride of mercury $^{1}/_{5000}$, which provoked strong contractions of the uterus, and were therefore discontinued. With the aid of ergot and lysol douches the uterus returned to somewhat near the normal size, so that the final result would indicate that the patient's ultimate recovery would be complete.

A New Method of Resuscitation.—There are several well-known and well-tried methods of stimulating respiration in the newborn, which are familiar to everyone. The following, however, may be quite new, and certainly is worthy of attention. M. MUNKEVITCH (La Sem. Méd., Nov. 5, 1902) begins by freeing the mouth, pharynx and upper air passages of mucus. Then, after having cut the umbilical cord, he proceeds to cause artificial respiration by taking care to give the body of the child a point of support (un point d'appui) instead of holding it in suspension, which is one feature of Schultze's method, in common use in France. He seats the infant upon a bed or table, suitably covered to prevent slipping or chilling, with the lower legs extended and separated. Standing behind the child he places his two hands beneath the axillæ so that the thumbs rest upon the shoulder-blades, and the fingers upon the ribs in front. He now proceeds to carry out the movements of respiration with the trunk by flexion and inclination toward the angle of separation between the lower limbs, exerting meanwhile uniform pressure with his hands upon the chest. In this manner he forces the diaphragm upward, while he compresses the chest, and thus brings about expiration. The reverse of this maneuver constitutes inspiration. In order to make the maneuver still more efficient, he sometimes places some tunic rolled into a small mass behind in the small of the child's back. The movements of flexion and extension are repeated systematically, and their rapidity should not be greater than that of ordinary infantile respiration, namely, about 40 to the minute. According to this observer's experience, it is a very efficacious method of causing a child, who otherwise might die, to breathe.

Extra-uterine Pregnancy.—After giving a detailed report of two cases of extra-uterine pregnancy, ODON TUSZKAI (Gaz. de Gyn., Oct. 15, 1902) gives the following as his conclusions in the symptoms and etiology of extra-uterine pregnancy: (1) The patients are usually multipara; (2) inflammatory disease is often present previous to conception; (3) there is usually a long period before the previous delivery; (4) the menses cease for eight to ten weeks and then appear in the form of irregular and abundant hemorrhages; (5) in the fifth or seventh week there are intermittent pains in the abdomen, which increase in intensity; (6) the signs of probable pregnancy are already present in the pigmentation and the livid color of the genital mucous membranes. The majority of these cases terminate well, if a diagnosis be established before rupture takes place. The signs and symptoms in the third month and previous to that time are decidedly uncertain. The microscopic examination of the scrapings of the uterus, where an extra-uterine gestation is suspected, may in some cases give some clue to the true state of affairs; hence, the author advises that this be done if there is any doubt. Snoolsky showed the importance of the clinical signs in the first three months of this condition. In this the author concurs.

HISTOLOGY, PATHOLOGY AND BACTERIOLOGY.

Thrombi Due to Agglutinated Red Cells.—It has been found by S. FLEXNER (Univ. of Pa. Med. Bull., Nov., 1901) that agglutination of red corpuscles intra vitam is not uncommon in infectious diseases in man and animals. This agglutination causes a special variety of thrombi, which may be denominated agglutinative thrombi. When such thrombi are old, or when the agglutination is compact, they may present appearances to which the name of hyaline thrombi has been applied. Other alterations in the blood than those arising in infectious diseases, may bring about agglutinative thrombosis, and the nature of this alteration is little understood. Poisons which destroy corpuscles rapidly are provocative of agglutinative thrombosis. The so-called fibrin-ferment thrombi are probably nothing else than agglutinative thrombi.

Very Small Bacteria and Their Passage Through Filters.—Since some of the pathogenic germs can pass through the usual bacterial filters, it was assumed by E. v. ESMARCH (C'blatt f. Bact., Parasit. u. Infect., XXXII., Nos. 8 and 9) that such small bacteria also occur among the saprophytes. Negative results were obtained by the examination of about 50 fluids in a state of putrefaction, yet in one case the filtrate became turbid after 10 days. The microscopic examination showed the filtrate to be a pure culture of a cholera-like vibris, which appeared as a spirillum upon certain culture media. It was as large as an influenza bacillus, did not liquefy gelatine and possessed no pathogenic properties. The author gave to this germ the name spirillum parvum.

Syphilis and Malaria.—In contrasting syphilis with malaria, R. RUGE (C'blatt f. Bact., Parasit. u. Infect., XXXII, Nos. 8 and 9) concludes that the germ of the former disease may also be a protozoan, since the two diseases resemble each other in many particulars. In both there is a distinctly limited period of incubation, transmission is possible in the early stages, a long continued immunity remains behind, there is a great tendency to recurrence, and the brain is often involved, though in syphilis only in the later stages. That a disease caused by protozoa may be directly transmissible is well shown by the coccidium oviforme.

New Germ Causing Bone Necrosis.—In the pus as well as in the dead bone of a case suffering from extensive necrosis of the bones of the skull and face, and first looked upon as syphilitic and treated with iodide of potassium, with temporary improvement, H. F. HARRIS (C'blatt f. Bact., Parasit. u. Infect., XXXII, No. 10) isolated peculiar diplococci, seated within the pus cells and slightly curved bacilli, in groups of two or three, on human blood serum in the presence of hydrogen and on glucose agar, a limited growth of the bacilli was obtained but there was never the slightest indication of development of the cocci. Under the impression that the germs might possibly develop in some of the lower animals, the pus was injected into mice, guinea-pigs, rabbits and dogs but absolutely no ill-effects followed. Even when the pus was introduced into the cranial bones; no lesions followed; yet from their constant association, there can be no doubt as to their causative relation.

Value of Phenolphthalein in Culture Media.—It has been found by R. ZIELLECZKY (C'blatt f. Bact., Parasit. u. Infect., XXXII., No. 10) that the addition of a weak phenolphthalein solution does not inhibit the growth of bacteria. When larger amounts are added, the colon bacillus will still develop well with the production of less acid; with the typhoid germ however, all growth ceases. A culture medium stained with phenolphthalein will be decolorized earlier and more intensely by the colon than by the typhoid bacillus. The former decolorizes phenolphthalein bouillon in from five to seven hours, and phenolphthalein agar in eight hours. In symbiosis with the typhoid germ, the colon bacillus produces much less acid in a given length of time than its pure culture of the same age. In practice the phenolphthalein medium is to be recommended since its preparation is simpler than other similar media and since the biochemical processes produced by the inoculated bacteria, can be detected sooner.

Antiseptic Value of Colloid Silver.—The literature is full of reports, on the one hand praising the value of collargol in septic conditions, on the other, questioning all efficacy. Hence E. COHN (C'blatt f. Bact., Parasit. u. Infect., XXXII, Nos. 10 and 11) tested the properties of this peculiar body by experiment. In its solution in water as well as serum, the colloid silver was found to distinctly inhibit the growth of bacteria but to possess very slight bactericidal powers. Even large doses injected into the veins did not seem to have untoward after-effects. Autopsy performed in one hour after injection showed that the silver was deposited in most organs. By a chemical examination, no silver could be found in the blood 45 minutes after the injection, hence the tissue-juices are certainly not converted into bactericidal solutions as is stated by some. A number of animals were artificially infected with streptococci, staphylococci, anthrax and cholera germs. Very large doses of colloid silver were then injected and the blood examined bacteriologically at different periods after the injection. In all cases the respective germs were still found present in the blood in large numbers. It follows that the colloid silver has no effect upon sepsis, since the metal is rapidly deposited in almost all the organs.

General Infection with the Bacillus Aerogenes.—The second case in which the bacillus aerogenes capsulatus was found in the circulating blood during life is reported by R. I. COLE (J. Hopk. Hosp. Bull., Oct., 1902). The case was that of a young man who had been run over, and from whose wounds an emphysema extended after 24 hours. Death set in shortly afterwards and an autopsy was not granted. The blood taken shortly before death contained no air-bubbles, yet when injected into a rabbit and the animal killed several minutes later, its body swelled up considerably after it was kept in the incubator over night. The case demonstrates that whatever the possibility that this organism may produce gas bubbles in the blood during life and that it may produce gaseous emboli, it is quite certain that it may exist in the blood without any gas-production.

Hemolysis in the Blood of Cold-blooded Animals.—The following facts are given by H. NOGOUCHI (Univ. of Pa. Med. Bull., Nov., 1902) concerning the interaction of the blood of cold-blooded animals, with reference to hemolysis, agglutination and precipitation: (1) The sera of many cold-blooded animals contain both agglutinins and hemolysins; (2) the sera of some cold-blooded animals contain precipitins; (3) the amount of, agglutinin, hemolysin of precipitin in any given serum is no measure of the amount of either of the other principles; (4) the sera of some species, while strikingly agglutinative for certain kinds of corpuscles, may be almost devoid of hemolysins for these or even other kinds of corpuscles. Conversely, the occurrence of active hemolysins in a given serum is likely to be attended with the existence of marked agglutinating properties for some species of corpuscles; (5) from their manner of action, the multiplicity of agglutinins and hemolisins is rendered highly probable; (6) the agglutinins are active upon red and white corpuscles, irrespective of whether the animal yielding them possesses both red and white or only white corpuscles. The hemolysins are erythrolytic and leucocytic if obtained from animals possessing red and white corpuscles; while in certain animals possessing only white corpuscles, hemolysins, in contradistinction to agglutinins are wholly or almost entirely absent. (7) The serum of certain warm-blooded animals—*i.e.*, horse, etc.—exhibits agglutinating power over red corpuscles of some species of cold-blooded animals, and causes slight precipitation with a few kinds at least of sera of these animals. In another article, the same author finds that artificial hemolysins, agglutinins, anti-agglutinins, serum precipitins, aqueous humor precipitins and milk coagulins can be produced through immunization in certain cold-blooded animals. Hemolysins and agglutinins can be produced in animals which do not possess erythrocytes.

Isoagglutinatinins and isohemolysins can be produced in certain species of turtles. The isobodies thus developed have a slight erythrolytic action upon the blood of other, though related, species of turtles. The complements of turtle's blood are rendered inactive by a temperature of 50° C., maintained for 30 minutes. The precipitins and coagulins for aqueous humor and milk, respectively, can be produced in animals which do not possess the corresponding fluids in a strict sense. Those facts demonstrate the widespread distribution of common receptors through the animal kingdom, and extend the chief tenets of Ehrlich's hypothesis to invertebrates and vertebrates among the cold-blooded animals.

Serumtherapy Against the Bacillus of Dysentery.—Shiga's bacillus of dysentery is the cause of acute and other forms of dysentery in tropical and temperate climates, and probably, of a part of the summer diarrheas prevailing in warm countries among infants, according to F. P. GAY (Univ. of Pa. Med. Bull., Nov., 1902). Guinea-pigs are susceptible to experimental infection with the bacillus and react to inoculation in a characteristic manner. Cultivated outside of the body, the bacillus quickly suffers a reduction in virulence for guinea-pigs, but the virulence can readily be increased by successive passages through the bodies of these animals. A uniform degree of virulence in the organism can be established by the passage of the bacillus through these animals, which is independent of its source and which adapts it for the production of vaccines of quite uniform activity. The vaccines consist of suspensions of dysentery bacilli, killed by the addition of trikresol. Their activity undergoes an increase, for a time at least which is coincident with disintegrative changes taking place in the micro-organisms. This vaccine suffices to protect guinea-pigs from a succeeding, multiple, fatal dose of living dysentery bacilli, and to produce in the horse an active immune serum. The latter exhibits marked protective properties in preventing fatal infection with the bacillus or intoxication with its vaccine. While the several dysenteric bacilli used belong to one definite species, minor distinctions were present among them. The bacillus of dysentery resists bacteriolysis by blood-serum to a greater extent than some other members of the colon-typhoid group. A useful serumtherapy of bacillary dysentery and of certain forms of the summer diarrheas of infants, is rendered highly promising.

EYE, EAR, NOSE AND THROAT.

Antral Empyema.—The constant swallowing of fetid pus, such as may occur with empyema of the antrum, may cause a general debility whose etiology is frequently not recognized. Hence J. W. BARRET (Inter. Med. Jour. of Austral., Oct. 20, 1902) points out the importance of nasal examination in doubtful cases. The transillumination test is of considerable value. In normal cases there will be a dark patch below the rim of the orbit and on each lower lid, a light spot. There are, however, cases in which there is no light spot on either side, in some of which there is a double empyema, in most of which there is no empyema at all. Before illuminating, it is best to spray the nose with adrenalin and cocaine, to reduce the volume of the soft parts. If illumination is absent on both sides, the condition of empyema can be determined by examining the nostrils, for the discharge of pus almost invariably causes polypoid thickenings of the mucous membrane. If there is the least doubt, it is well to make an exploratory puncture. A trocar is passed under the fore-part of the inferior turbinated and then pushed outward. Care must be taken to get the point as high as possible. The proceeding is quite painless and usually bloodless. Strangely, some patients do not notice an objectionable smell, but are cured by drilling an opening with an electrical engine over the socket of the first or second molar tooth. The cavity is then syringed with sodium bicarbonate solution and the contents of the antrum sucked out repeatedly during the day. Of the remaining cases, many are troubled only with the discomforts of syringing. If the health is otherwise good, the radical operation through the canine fossa may be performed.

Nature and Treatment of Pterygia.—A new feature in treatment of this frequently observed affection of the cornea and a new view of its cause have been given us by J. O. McREYNOLDS (Jour. Am. Med. Ass'n, Aug. 9, 1902), in his paper presented to the last meeting of the American Medical Association. In Texas, this writer had found pterygia very common and very aggravated, which he attributes to irritation by wind and dust, especially the latter, becoming embedded in the conjunctiva near the edge of the cornea and setting up fine ulceration resulting in adhesions to cornea. Basing his treatment on this idea of origin, he avoids having a line of union by sutures in the interpalpebral portion of the conjunctiva, by operating so as to cut only along the lower margin of the growth, after dissecting up the "head" and perhaps amputating a portion. The growth is then freed from its subconjunctival attachments and carried beneath that portion of the conjunctiva lying below the incision by means of a loop of suture carried through the head by a needle at each end, emerging apart in the lower fornix, upon which traction is exercised before tying.

Beer-Yeast in Otology.—That beer-yeast, administered by mouth, exercises a specific effect upon pyogenic organisms in suppurative conditions is not to be questioned, writes L. SUNE y MOLIST (Rev. Cien. Méd. de Barcelona, XXVIII, No. 7, 1902), who has used a special preparation of that substance, compounded from the formula of Dr. Fita, and known as "Cerevisina-Fita," in otitis media, mastoiditis and otitis externa furunculosa, with surprisingly good results; a teaspoonful being given every four hours. The pain subsided and swelling was markedly decreased upon the day following administration of this remedy in a case of mastoiditis; and by the fourth day, the last remnant of inflammation had disappeared. This method of treatment was equally successful in a case of acute suppurative otitis with perforation of the tympanum and involvement of the mastoid cells. Local treatment with antiseptics had been used for three days without avail, when it was decided to essay the effect of cerevisina, which gave immediate relief; and the patient was completely restored to health within less than a week.

THERAPEUTICS.

Toxicity of Sublamin.—Sublamin, an ethylene-diamin compound of mercury, has been carefully studied by A. SCHUFTAN (Inaug. Dissert., Berlin, 1902), in order to determine its toxicity as compared with sublimate. The new drug was introduced into rabbits by mouth, subcutaneously and intravenously and death usually occurred in a characteristic way. First, a marked excitement is noticed, soon, however, the head becomes more and more heavy until it can no longer be raised. In a little while the extremities are also paralyzed and the animal topples over. Respiration becomes difficult, clonic and tonic spasms set in and death occurs in general convulsions. Sometimes the muscles of mastication are involved first and most markedly and a bloody diarrhea may develop. By weight, sublamin was found to be less toxic than sublimate, no matter how given. If, however, it be remembered that 17 parts of sublamin correspond to 10 parts of sublimate, the former proves more active probably because a coagulation of albumin in solution does not take place. Upon this the ready absorption of sublamin also depends. To be certain that the increased toxicity is not due to the ethylenediamin radical, the author also conducted some experiments with this, with negative results.

Aristochin.—Aristochin, a tasteless substitute for quinine, contains, according to H. STURSBERG (Münch. med. Woch., Nov. 11, 1902) as much as 96.1 per cent. of quinine. It appears as a white powder, readily soluble in dilute muriatic acid, and does not precipitate on diluting the solution. After five grains given by mouth upon an empty stomach, quinine can be detected in the urine in half an hour, though the reaction is never so intense as after the same amount of quinine muriate. In order to test the value of the drug, the author employed it in a number of cases of pertussis, and noticed that in all a diminution in the number of attacks took place and that they often appeared in their original frequency when administration was stopped too soon. Gastric disorders did not occur nor were other bad after-effects noticed.

Toxicity of Methyl Alcohol.—The symptoms of acute poisoning of animals by methyl alcohol are in general, similar to those observed after poisoning by ethyl and other alcohols, according to R. HUNT (Qu. Jour. of Inebr., Oct., 1902). The symptoms are, however, produced more slowly and the duration of the intoxication is more prolonged. Even when injected directly into the vein of an animal, the coma does not appear for some little time and it may last for two to four days. In man there is a tendency to explain the long-continued narcosis by the presence of impurities, yet it is probably the methyl alcohol itself which causes it. Other signs are marked fall of body temperature, changes in the alimentary tract, such as hemorrhages leading to bloody diarrhea or to vomiting of bloody matter, convulsive movements of a rhythmic or choreiform character, nystagmus and dilatation of the pupils. There seems to be but little difference in the degree if toxicity of the two alcohols, yet certain organs seem to be more vulnerable to the injurious action of one alcohol than to that of the other, as in the case of the eye with wood alcohol. In subacute and chronic poisoning, however, the animals succumb more rapidly to methyl alcohol, probably, since this is but partially oxidized in the body and leads to the formation of the markedly poisonous formic acid, through the intermediate body, formaldehyde. Since sodium bisulphite, when administered with methyl alcohol, causes a great increase in the excretion of formic acid, it would be interesting to determine if this salt is of any therapeutic value in cases of poisoning. There is no doubt that methyl alcohol is totally unfit for use as a substitute for ethylic alcohol, in any preparation which is to be taken internally.

How and When to Apply Forceps.—After 20 years' experience, I take it to be a good rule to apply forceps, says E. ROSENTHAL (Ann. of Gyn. and Ped., Nov., 1902), if the parts are normal, when no progress is made for three hours after the uterus is open. Waiting only produces a tedious labor. When lacerations occur under the use of the forceps, they would have occurred if forceps were not used. I carry axis-traction forceps, large and small, regular forceps, and a pair that can be locked with a screw. Should the head be above the superior strait, the axis-traction may work wonders; if, however, the head is in the inferior strait, it may require the Simpson small forceps. Never apply forceps in any case whatever without an anesthetic. If forceps slip, or if a reasonable amount of traction fails to deliver the child they should be removed. Forceps should never be used where it is impossible to deliver a living child.

Taking Castor Oil.—A simple method of giving castor oil without any nauseating after-taste is to have the patient wash out the mouth with water as hot as can be borne, then swallow the oil, then again rinse out the mouth with hot water. The first hot water cleans the mouth, makes it hot, and coats it with a layer of water so that the oil has very little chance to stick anywhere. The oil therefore slips down easily. Then hot water is again used, this time to remove any particles of oil that might have adhered to some structure in the mouth. Thus the mouth is left clean and sweet and the patient gets no taste of the oil.

Sulphur Cream for Dandruff.—This preparation, or unguentum petrolati co., writes GEO. T. JACKSON (Trans. Amer. Derm. Ass'n for 1901), is made as follows:

℞	Sodii boratis............	1.0	(gr. xv).
	Sulphur. precip..........	14.0	(ʒiiiss).
	Aquæ rosæ.............	30.0	(℥i).
	Ceræ albæ..............	14.0	(ʒiiiss).
	Petrolati	75.0	(℥iiss).

Made properly, this should be smooth, white, and free from sulphur odor. Used once or twice a week it keeps the scalp comfortable, does not make the hair too greasy, and checks the dandruff. Drs. Bronson, Bulkley, Corlett, Fordyce and Johnston testified as to the value of this ointment.

Massage.—In the scientific practice of massage, there are a series of manual movements adapted to the result desired according to J. MULHOLLAND (Med. Stand., Dec., 1902). First there is gentle surface stroking which quietly starts the circulation, then friction is begun with firm, deep pressure or rubbing, and then comes deep kneading. The strokings and kneadings are usually in the direction of the venous circulation, and in all the movements the greatest pressure should be made from the periphery toward the heart. A general rub should last from 20 minutes to half an hour, and should be given preferably about bedtime. In orthopedic work a maxim obtains that to tighten a loose joint rub lightly, to loosen a firmly fixed joint rub deep and hard.

Glaucoma.—The myotic most commonly used to reduce intraocular tension, write C. A. WOOD and T. A. WOODRUFF (Med. Stand., Dec., 1902) is the sulphate of eserine, one-half to one grain to the ounce (gm. 0.03-0.06 to cc. 30.0). On account of the pain in the eye and brow, produced by eserin when instilled into the conjunctival sac it is commonly combined with cocaine, which also helps its absorption:

℞	Eserinæ sulph..........	gm. 0.03	(gr. ss).
	Cocainæ hydrochlor...	0.03	(gr. ss).
	Aq. destill...............	ad cc. 30.	(℥j).

M. Sig: One drop in the eye three times a day.

Stronger solutions may set up conjunctival irritation and ciliary congestion. If the eserine causes too much discomfort use:

℞	Pilocarpinæ nitrat......	gm. 0.25	(gr. iv).
	Aq. destill...........	ad cc. 30.0	(℥j).

Massage of the eyeball through the closed lids with an ointment of one-tenth to one per cent. of sulphate of eserine is especially useful in reducing the increased tension. The general health should be looked after, and, if indicated, full doses of salicin, sodium salicylate, or colchicum administered, or a visit made to a health resort. Constipation must be relieved, late hours avoided, and the mind kept free from business cares.

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THE PROGNOSTIC AND THERAPEUTIC IMPORTANCE OF ARTERIAL PRESSURE.

TO FOLLOW the literature relating to arterial pressure in man is to read much and to learn little. It is a subject which readily attracts the attention of the clinician but rarely holds it, and the explanation of the evanescent interest which it arouses is not far to seek. It appears at first glance to be a royal road to clinical power, while in reality it is as difficult a path as any along which clinical research has ever made its way, demanding intimate knowledge of physiology and pathology, a passing acquaintance with physiological psychology, a wealth of clinical material and an inexhaustible fund of patience.

The importance of this subject is emphasized anew in a paper by Ch. Jourdin and G. Fischer (*Rev. de Méd.*, Nov. 10, 1902), in which the authors review part of the literature and endeavor to show the prognostic and therapeutic bearings of transient and permanent alterations in arterial pressure. It is interesting to know how to combat successfully a condition of excessive or deficient tension, and this the authors clearly point out. They also present the conclusions of many writers as to some of the conditions leading to vicious circulatory disturbances and as to the circumstances under which therapeutic interference is indicated; but they do not present any preliminary discussion of the nature and the limits of physiological variations in blood-pressure, although without preliminary study the interpretation of the clinical phenomena of arterial tension is scarcely possible. The fact is that the time has not yet arrived for the use of blood-pressure apparatus by the general practitioner, for much of the accessible literature on the subject is evidently the product of hasty and ill-considered research by investigators who, while using such apparatus, neglected to inform themselves as to the conditions of its use.

The common physiological variations in arterial tension are really much greater than is generally supposed. Normal pressure curves differ greatly in individuals according to age, occupation and temperament, being powerfully affected by habits of bodily exercise, of eating and drinking, of thought and emotion. An understanding of the principles of these physiological variations is indispensable in clinical tonometric work. The obverse of muscular exercise is bodily rest, and unaccustomed rest is often the true cause of modifications in blood-pressure attributed in hospital practice to drugs prescribed as vascular sedatives. What is true of physical rest is equally true of mental rest. The prompt result of psychical excitement (not carried to the point of nervous exhaustion) is a rise in arterial tension; and at the other end of the scale of consciousness it is found that normal sleep, the least active of all mental states, will profoundly depress arterial tone. In a person subjected to a constant succession of psychical stimuli, blood-pressure tends to rise steadily from morning until night. In sane individuals excessive arterial tension and headache go hand in hand. Drugs which are classified as vaso-dilators may fail utterly to give relief in such cases, while sleep obtained by other means may work like magic. We cannot here enter into a discussion of the effects of eating, of mental and physical exhaustion, of posture, of baths, of perspiration; but from what has been said it must be clear that by beginning with the physiology of arterial tension the clinician will be able later to approach its clinical pathology armed with many useful weapons for the control of abnormal states of hypertension and hypotension.

Pathological alterations in blood-pressure may be temporary, as in infectious diseases, pleurisy with effusion, anemia, icterus, etc., or they may be lasting, when due to anatomical changes in the circulatory and eliminative organs, such as arterio-sclerosis, valvular lesions, degeneration of the myocardium, interstitial nephritis. In the former instance a study of arterial tension has a limited prognostic value; in the latter such observations are of value both in diagnosis and prognosis and may enable the clinician to foretell an acute exacerbation of a chronic disease.

In the interpretation of states of blood-pressure for purposes of prognosis a starting-point is furnished by a knowledge of the limits of tension, high and low, which are consistent with life. It should be borne in mind that the expression of these limits will depend upon the instrument used. Persistent high pressure is a grave condition, in which the prognosis depends to some extent on the cause. The real degree and significance of high arterial tension cannot be ascertained by a single daily observation any more than one can gain by such means a knowledge of fever; the remissions must be recorded and considered. But profound hypotension, however transient, is always a very serious matter, and there appears to be a limit which, if once passed, even for a moment in the course of a depressing intoxication, or in shock from any cause, is the inevitable forerunner of a speedy death. In these latter cases the restoration of the pulse to its normal state would mislead the ordinary observer and the true prognosis could be supplied only by knowing what was the condition of arterial tone during the transient period of shock.

Rougier tells us that in pneumonia arterial tension is a valuable prognostic sign. In ordinary cases blood-pressure falls during convalescence, while in cases which terminated fatally he observed a premature depression of arterial tone during the acute period of the disease. But while premature hypotension is regarded as a bad sign, seriousness attaches also to marked hypertension in this disease, especially if the patient be gouty, for in such cases the weakened heart must struggle against a three-headed enemy—hypertension in the portal, the pulmonary and the general arterial systems. In typhoid fever diminished arterial tension is the rule; marked elevations or excessive depressions of tension are considered forerunners of serious complications, but are, after all, less useful in prognosis in this disease than are variations in the frequency of the pulse. In secondary pleurisy high tension signifies nephritis, low tension tuberculosis. In influenza blood-pressure is said to be greatly reduced; but the difficulty in this condition, and indeed in all fevers, is that in order to know exactly to what extent arterial tone has been altered one would be obliged to have a record of the patient's normal or pre-febrile pressure curve. At the present time it is wise not to attach any prognostic value to tonometric readings in neurasthenia, epilepsy or mental diseases.

We can only name here some of the therapeutic measures for enhancing or lowering arterial tone. Among the former are the use of digitalis, strychnine, camphor, caffeine, subcutaneous injections of salt solution. In order to diminish tension the therapeutist will endeavor first of all to remove the cause of the abnormal state. In edema of the lungs, uremia and eclampsia immediate relief may be obtained by phlebotomy. Dyspnea or neuralgia associated with high tension may be relieved by inhalations of amyl-nitrite. Chronic conditions involving hypertension can be favorably influenced by diuretics, diaphoretics, saline purgatives, calomel or a milk diet.

THE PROPHYLAXIS OF VENEREAL DISEASE.

A VERY valuable practical suggestion calculated to limit the spread of venereal diseases to a marked degree, and well worthy of general notice, was made at the last meeting of the Harvard Medical Society of New York City, held November 22, see Society Proceedings, MEDICAL NEWS, this week, page 42. Dr. Follen Cabot presented two printed slips, one of which is to be given to each patient suffering from syphilis or gonorrhea, according to his ailment. These slips tell in plain language, readily intelligible even to those of limited understanding, all that it is important for a patient suffering from a venereal disease to know, if he is expected to take proper precautions, in order not to spread the disease by carelessness, or prove a source of danger to himself or others. These printed slips have already been adopted at the New York Presbyterian Hospital and one of them is to be handed to every venereal patient who comes under treatment at the institution. At the meeting of the Harvard Medical Society it was suggested that this method of distributing information should be called to the attention of the New York City Board of Health, with the idea of having either these printed slips or something similar for distribution to the venereal patients of the city's charitable institutions.

The idea is an excellent one and is so simple and practical that it deserves to be widely put in practice. Even family practitioners might well keep a supply of these slips on hand, since they enable them to give almost indispensable information without delay and without the possibility of forgetting some important point that may prove a source of danger to the patient himself or to friends. Explicit directions like these are needed in every case and the physician has not always the time to go into details and, besides, the patient readily forgets and needs to have something that will frequently remind him of necessary precautions. Far from resenting, patients will welcome such directions, and the fact that the directions are printed gives them an added sanction to many minds and helps to remove any lingering suspicion there may be, that the physician is exaggerating the seriousness of his illness for personal reasons.

One of the most serious aspects of the present state of the question of the limitation of venereal diseases is the lack of appreciation, on the part of the public generally, of the significance of these serious diseases. Gonorrhea is apt to be considered as a passing ailment that most men go through at least once. Only by accident and that rarely is this disease supposed to have any serious consequences. Syphilis is more mysterious and more feared, but its true nature is scarcely more than suspected. That gonorrhea may persist almost without symptoms for years and prove a source of infection of the wife, or be the most frequent cause of ophthalmia neonatorum with consequent blindness is not realized. That syphilis is the great cause of early apoplexy and the most fruitful soil for the development of such serious nervous diseases as locomotor ataxia and general paralysis is only just beginning to be generally known.

Much of this state of popular misapprehension as to venereal diseases is due to the fact that medical men have themselves only come to a proper appreciation of them in quite recent years. Our knowledge has made wonderful strides in these subjects in the last 25 years and we should make special efforts that popular knowledge shall not lag far behind scientific progress, since the subject is too important. Hence the advisability of taking up at once a scheme like this that promises to be widely informing in a very simple ethical way. There is, perhaps, one suggestion as to an addition to Dr. Cabot's directions, as printed, that might be made with propriety. Patients should be warned that there are sometimes nervous sequels of syphilis. These are not frequent, much less invariable, but syphilitics should be enjoined not to neglect putting themselves under the care of a physician should any nervous symptoms begin to be manifest. Besides they should be told of the necessity for them to tell their medical attendant, in such cases, of their having had syphilis. In this way undoubtedly dangerous delays in treatment and misunderstandings will be avoided, while lives will be saved by the promptness with which antisyphilitic remedies can be administered.

THE X-RAYS FOR MALIGNANT DISEASE.

THE recent discussion of the therapeutics of the X-rays in malignant disease, at the meeting of the New York State Medical Association (see Society Proceedings, MEDICAL NEWS, Nov. 1, 1902), presents some of the limitations of their use as well as the helpful suggestions that experience has brought with it. It is clear that in the present state of our knowledge the only affections for which there is proper justification for the employment of the X-rays are superficial cutaneous cancer and inoperable tumors or recurrences. To suggest the use of the X-rays for primary cancer of the breast, for instance, as a method of treatment advisable early in the case is to expose the patient to serious risk without adequate hope of securing a cessation or retrogression in the growth of the tumor which may and in all probability will proceed to give lymphatic metastasis during the precious time expended on this method of treatment. These will surely complicate the further course of the case and may make radical operation by the knife ineffective.

There seems undoubtedly to be a good field for the employment of the X-rays, as a prophylactic measure after surgery has accomplished all it can. Frequent exposures to the X-rays will cause retrogression of many recurrent cancer nodules, such as make their appearance along the line of scars or even in more or less distinct, if only superficial, lymphatic glands. If in anticipation of such recurrences and metastases, X-ray treatment be instituted, there is good reason to think that deep tissue involvements may be prevented and lives saved. For while recurrences usually take place in the superficial parts they may be much deeper and spread beyond effective treatment before suspicion of their presence is aroused. This method of treatment may also be made to apply to uterine cancers after panhysterectomy, for by specially constructed tubes, exposures may be made by which the X-rays are allowed to act only upon pathological tissues. This latter suggestion has as yet been very little tried, but it presents elements of hope in what are so often practically hopeless cases that it seems well worth putting to the test of extensive experience.

As for cutaneous cancer and especially the form known as rodent ulcer the X-rays seems the best, easiest, and most effective method of treatment yet introduced. This is saying much for the systematization of the employment of arsenic pastes and has given excellent results. The cosmetic results of X-ray cures are especially satisfactory. It has been suggested that certain combinations of remedies may prove more effective than any single one in some of the more obstinate of these cases. For rodent ulcers with rolled-up, thickened, indurated edges, Dr. Kinnicut said that English authorities have found an alteration of treatment by Finsen rays and X-rays more effective than the use of either agent alone. Very strong light must be employed and the parts on which it is expected to act must be rendered bloodless by firm pressure against the lens of the Finsen lamp.

As might be expected, the technic of the use of X-rays is not yet perfected. One of the most serious difficulties results from changes in the vacuum of tubes that sometimes give the rays increased burning power. The X-rays are not well understood, but it is generally held that they are not a form of electricity but are more closely related to light. Electrical energy is the most available means for their production.

It must be borne in mind that the results obtained by the use of the X-rays for malignant disease have not endured sufficiently long to give any assurance of permanency of cure. In a certain number of cases the disappearance of tumors, especially of secondary recurrent nodules of carcinoma of the breast, has been followed by subsequent symptoms from internal metastases and even by recurrences in the scar. A certain number of patients, with regard to whose definite cure there are notices in literature, are now dead from such recurrences. With regard to rapidly growing sarcomata the X-rays are especially ineffective, yet they may at times retard very much the progress of the case. For the slower varieties they seem to encourage breaking down, and this is apt to be followed by decided improvement, or even what appears to be radical cure.

Evidently much remains to be learned about methods of application and ultimate results of X-ray treatment, yet the prospect is most encouraging. When it is realized that a symposium, such as that presented by the New York State Medical Association, on X-rays in cancer would have been absolutely impossible only a year ago because of lack of experience, it can be seen how much has been accomplished in a few months. Over-enthusiasm in the reporting of results is especially to be deprecated at this stage in the evolution of our knowledge of the subject. Obstinate cases and failures must be included in reports or there will eventually be as sad disappointment in this matter, perhaps, as in the use of certain forms of electricity. In at least one reported case, a malignant neoplasm developed with fatal results in the scar of an X-ray burn. There is need, therefore, of extreme care in the use of the new method, and only the control experiences of many conservative observers will supply us with suitable data for an exact definition of the indications and limitations of X-ray treatment.

ECHOES AND NEWS.

NEW YORK.

Professor Lorenz at Cornell.—The Professor met at the Cornell University Medical College on the afternoon of Thursday, Dec. 18, the most representative body of medical men he had as yet encountered. Nearly five hundred, among whom were Dr. Stimson, Dr. Sayre, Dr. Gibney, Dr. Polk, Dr. Keyes, Dr. Willy Meyer, Dr. Gilman Thompson, and others well known in the profession watched the Professor with great interest. He reduced three congenital dislocations of the hip and overcame by his manipulative method a very severe case of talipes equino-varus. Even such experienced surgeons as Dr. Stimson and Dr. Keyes remarked upon the comparative innocuousness of what appeared to be extremely violent treatment. The plaster splint applied to the hip-joint was fitted with an ingenious appliance new to most of those present for keeping the child clean. Next to the skin was applied the ordinary cotton tubular shirting enclosing the pelvis, having beneath it a broad cotton bandage with the ends protruding above and below. A large amount of cotton was superimposed and over this a very heavy plaster splint, beginning just below the knee and including the pelvis. This fixed the leg in the usual position, with the thigh at a right angle to the pelvis and in extreme abduction. The broad cotton bandage with the protruding ends could now be pulled up and down underneath all this to give the child a "dry wash." None of the surgeons had used such an appliance and commented on its cleverness. In the splints, which were left several months in place, it would prevent the undesirable itching so often complained of.

The case of clubfoot was an example of the severest form of the deformity. The soles pointed directly inwards and the anterior portion of the foot slightly upwards, so that walking was accomplished by stepping on the callous just below and in front of the external malleolus. This case was handled with great apparent roughness and yet evidently with extreme skill, as in the course of 15 or 20 minutes the foot was in a perfectly normal shape. It was accomplished by manipulation by the Professor, but his assistant, working on the other foot, used a wooden triangular rest having a blunt apex, against which, as a fulcrum, he pushed the outer part of the foot in producing abduction and dorsal flexion. The Professor, using his hands alone in pressing the plantar structures, obtained the desired results without any appreciable injury, while his assistant, attempting to keep up with the rapidity of his chief and using the wooden fulcrum, ruptured the skin below the internal malleolus at the point of greatest tension. To even the experienced physicians in the audience it seemed that there must be a great laceration of soft parts, and yet there was no evidence of it. The manipulations continued until the foot could be adducted and everted almost as much as it had been adducted and inverted. A plentiful amount of padding was applied and the foot was encased in the plaster bandage at least half an inch thick. It projected and enclosed the toes, but before it had thoroughly dried was cut away enough on the top to expose the dorsal aspect of the tips of the toes. A fenestrum was then cut about half an inch wide extending from the base of the third and fourth metatarsals to just above the anterior surface of the leg between the malleoli. Through this fenestrum the cotton padding was removed and the skin exposed, then loose cotton was stuffed in the aperture and a cotton bandage applied snugly to make the pressure even where the splint had been cut out. This was to allow for the swelling which would occur and to permit inspection and thus give warning if the splint had to be removed. It is interesting to note that the swelling did occur in this child's foot and it was so severe that the whole splint had to be removed at St. Luke's Hospital on the following day, but no untoward results followed.

The clinic was extremely instructive and very interesting and very much appreciated. Only the Seniors of the Cornell University Medical College were admitted, as the Professor requested that the limited space in the Hall be reserved for the great numbers of the distinguished physicians who wished to observe his methods.

Obituary.—Dr. Frederick L. Brady, who was a member of Troop B of Roosevelt's Rough Riders during the Spanish-American war, died in St. Luke's Hospital from typhoid fever late Wednesday night. Dr. Brady was thirty years old, a son of the late Luther B. Brady, and a brother of Mrs. Orlando J. Smith of Dobbs Ferry. He was a graduate of the College of Physicians and Surgeons of this city. During the Spanish-American war, as a member of the Rough Riders, he was in the engagement at Las Guasimas, the battle of San Juan Hill, and the siege of Santiago.

PHILADELPHIA.

Memorial of Dr. Packard.—A committee has been formed to secure funds for the painting of a portrait of the late Dr. Frederick A. Packard, the portrait to be presented to the College of Physicians. The committee is headed by Dr. H. C. Wood, chairman, and Dr. Alfred Stengel, secretary.

Change in Asylum Methods Advocated.—The legislative commission appointed by the State to inquire into the condition of the insane in State institutions will urge the next legislature to place all such institutions under the control of a State lunacy commission as is now done in New York. Other changes in the methods of caring for these wards of the state will also be recommended.

A Fatal Case of Anthracosis.—This case was reported at the Pathological Society, Dec. 18, by Dr. T. S. Githens. The patient was a man of 27, a barber by occupation, this being an interesting point in the case. He had had syphilis five years before. Both parents had died of disease of the lungs. The man had been subject to cough and nightsweats for a year. The diagnosis of tuberculosis was made by several physicians in spite of the fact that the sputum was negative. The patient finally died during an attack of dyspnea. Autopsy showed a chronic plastic pleurisy and a great amount of pigment, extra- and intra-cellular, in the lungs and the surrounding glands. The lungs sunk in water. No tubercles were found. There were fibroid changes in the lungs. They contained one-fifth, by weight, of pigment.

Vaccination Campaign to Be Repeated.—While no smallpox epidemic is feared this winter, the authorities are taking precautions to avoid its possible occurrence. Patrolmen will be furnished with blank forms with which to make a canvass of each house to determine the number of unvaccinated persons present. Vaccine physicians will then call and vaccinate these persons free of charge. Twenty-five new cases of smallpox were reported for the week ending Dec. 27.

Almshouse Site Probably Chosen.—It now appears that the site for the new almshouse and the insane department of the Philadelphia Hospital has been finally chosen. A commission of 25 representative physicians, many of them being visiting physicians of the Philadelphia Hospital, inspected on Dec. 28 the unoccupied portions of the grounds of the House of Correction at Holmesburg and unanimously passed a resolution endorsing the site and recommending its final selection. It is understood that Mayor Ashbridge will send a message to Councils at their next session, recommending that the Bureau of Charities and Correction be authorized to relocate the almshouse and insane department on this site. As the city now owns this property, no appropriation for purchase of land is necessary. Nearly 150 acres of high, healthy ground, easily accessible by railroad, trolley, or water are available. The city now has $300,000 that could be applied at once to the erection of new buildings on the proposed site.

Sanatorium to Be Extended.—The Free Hospital for Poor Consumptives will ask the Pennsylvania Legislature during the coming session to pass a bill appropriating $300,000 for the enlargement and improvement of the sanatorium at White Haven. If this sum is obtained it will place Pennsylvania ahead of all other states in the care of consumptive poor. This will also probably make possible the establishment of other sanatoria in the state. With this extension, the Pennsylvania Society for the Prevention of Tuberculosis will endeavor to organize the entire State into a powerful system, with the Free Hospital as a center. The membership is now between 700 and 800. It is hoped that the number may be increased to 10,000. Auxiliary committees of women are to be formed in all the cities and towns of the State.

American and European Methods of Treating Tuberculosis Compared.—Dr. Lawrence F. Flick, president of the Free Hospital, has just returned from a trip to England and the continent, made for the purpose of studying the means employed in combating tuberculosis. He found that the serum treatment is employed in some sanatoria in Europe, but believes that in cases in which it might be used, equally good results are obtained here by our outdoor treatment and forced feeding. He did not see anywhere in his journey better results than those obtained at White Haven. The system of feeding used there he considers to be better than any that is employed in Europe. The American system of treatment is also more economical. The cost of building institutions is less here, being about $500 per bed, as compared with a cost of from $700 to $1,000 per bed in Germany, the appointments being equally good. The cost of maintenance there ranges from $7 to $10 per week, while at White Haven last year it averaged only $5.42 per week.

Care of Indigent Poor and the Dying.—Dr. Flick is thus further quoted: "Our movement is better than that of any country in Europe in that we devote ourselves to helping the indigent poor. In the European institutions the poorest patients are not accepted, because it is required that all cases treated shall be paid. They are looking particularly after the working classes, more than after the miserable creatures who are unable to help themselves. Another part of our work I did not see paralleled in Europe, and I think it is of more value than anything they undertake there. We have made provision for the penniless dying consumptives. They are really the source of greatest danger, because in its last stages the disease is most contagious. The European institutions have restricted themselves thus far to incipient cases. This question of caring for indigent dying consumptives is being agitated there at the present time, but except in France and England it has not yet been taken up in a practical sense. The city of New York is doing the best scientific work in the whole world in combating tuberculosis. The newspapers in Philadelphia have done more than any other agency to help this great and humane cause."

Perforation in Typhoid Fever.—At the meeting of the Philadelphia County Medical Society held Dec. 23, Drs. J. H. Lloyd and T. L. Coley reported "Two cases of Typhoid Fever with inconclusive symptoms; Perforation." The first patient was a butcher, aged fifty-two years, who, on the thirteenth day of the disease, was seized with vomiting and severe epigastric pain after taking milk. The temperature varied from 100° to 103° and the leukocyte count from 7,200 to 8,000. Not until 23 hours after the onset of pain did abdominal rigidity become marked. The excretion of urine diminished one-half after the onset of pain. The patient finally died and autopsy revealed a perforation nine inches from the ileocecal valve. This case was one in which the fever had not been severe, and there had been only slight diarrhea and tympanites. At the time of the onset of pain there was no drop in temperature, and there was no change in the pulse and respiration for 48 hours. The second case was that of a laborer of thirty-six, admitted on the twenty-first day of the disease. He had vomiting, some tympanites, and no local pain, but a general soreness. Three hours after the onset of pain the temperature was 103° F. The leukocyte count was 5,700. Operation was performed the second day and revealed four perforations. Death followed in 24 hours.

Surgical Treatment of Typhoid Perforation.—Dr. J. H. Hutchinson, who operated on the second case reported, said he believed that it was impossible to diagnose the majority of cases of perforation, yet if the surgeon waits until the diagnosis is clear it is generally too late to operate. He has studied ten cases of perforation and only two were of the fulminating type from the start, with clear symptoms of perforation. All the cases had pain, generally most marked at the onset, but in some progressive; the abdomen was not always distended, this condition being absent in some cases where the abdominal cavity contained a quart of feces. The leukocyte count was of some value, one case showing 11,000. Two cases had a hemorrhage with or following the pain. Operation should be performed in doubtful cases. The peritoneal cavity should be washed with salt solution at the time of, and following, the operation. The majority of deaths after operation are due to the disease and not to operation itself. Improvement after operation has been noted even in patients that afterward died. Dr. J. B. Roberts, who saw both of the cases above noted, made some remarks on "Two Erroneous Surgical Decisions in Perforation in Typhoid Fever." His refusal to operate was based partly on the fact that the evidences of perforation were at first inconclusive and partly because sutures are not apt to hold after 24 hours have elapsed. The first case was one having few characteristic symptoms. Possibly the increased rapidity of respiration was not sufficiently valued. They rose from 28 to 36. In the second case, too little attention was paid to the abrupt rise of respiration and pulse with the onset of pain. In these cases too much importance is apt to be given to abdominal examination and not enough to the general symptoms. It is more easy for those who have seen a patient during the course of the disease to make the diagnosis of perforation, as the diagnosis often depends on the change in the symptoms rather than on any typical sign of the perforation itself. Leukocytosis is of no great importance in diagnosing perforation in typhoid fever, although a relative increase in the polynuclear type is of value. Dr. Roberts' conclusions are (1) The occurrence of pain, with an increase in pulse and respiration, is of great value in the diagnosis of perforation in typhoid fever; (2) leukocytosis is of value only as above stated; (3) a decided fall in temperature is not a necessary accompaniment of perforation.

Obituary: Dr. Willits.—Dr. Mary Willits, first assistant physician to the female department of the Norristown Insane Asylum, died recently of cancer. Dr. Willits had been connected with the Asylum for ten years. She is said to have been the first woman admitted to membership in the Philadelphia County Medical Society, in 1888. She was for some time an instructor in the Woman's Medical College.

CHICAGO.

Eye Affections as Early or Characteristic Evidence of Nervous Diseases.—Dr. Henry Gradle discussed this subject. Paralysis of the eye muscles, if not of peripheral origin, may indicate tabes or basal syphilis. Progressive multiple palsies show involvement of the nuclei of the motor nerves of the eye. Acquired nystagmus may be part of disseminate sclerosis, Friedreich's hereditary ataxia, or cerebellar disease. Pupillary inequalities often precede general paresis and other degenerative forms of insanity. Paralysis of the iris sphincter may be the only sign of cerebral syphilis. The importance of the narrow rigid pupil as an early sign of tabes or general paresis is well known. Optic atrophy not rarely precedes all other manifestations of tabes. Choked disc aids materially in the diagnosis of brain tumors, while optic neuritis without edema may point to inflammatory cranial affections. The diagnosis of hysterical blindness depends mainly on the presence of normal pupillary reaction. The paper concluded with the inferences to be drawn from a study of hemianopsia.

The Most Prevalent Eye Diseases Among Children.—Dr. F. C. Hotz read a paper on this subject. He said that certain diseases of the eye are more frequent in children than in adults. In these, malnutrition plays a conspicuous rôle. The principal ocular affections coming under this head are: (1) Ulcerative blepharitis; (2) Phlyctenular keratitis and conjunctivitis; (3) Interstitial keratitis, due in from 50 to 80 per cent. of cases to inherited syphilis, and affecting persons between the ages of five and twenty years. The disease is not the outcome of actual specific lesions in the eye, but stands in close relation to the debilitated state of the system existing in victims of inherited syphilis.

Some Eye Disorders in Children Influenced by Malnutrition, Diathesis and Dyscrasia.—Dr. Alfred C. Cotton read a paper on this subject, saying that of the eye disorders in infancy and childhood, etiologically considered, the two extremes are perhaps best represented by ophthalmia neonatorum, on the one hand, and phlyctenular conjunctivitis, on the other. In the former we have an acute fulminant process due to specific infectious germs which produce, with marked regularity, typical inflammation on any conjunctiva, regardless of conditions of general nutrition, diathesis or dyscrasia. In the latter, we have a destructive lesion of the conjunctiva or cornea, with no etiological micro-organisms, invariably attacking only the eyes of subjects of malnutrition, or the so-called strumous type. The importance of ophthalmia of the new-born is so generally understood as to require no more than passing notice. Whether the family physician adopts the Credé method as a regular routine practice, or is content with the cleansing of the eyes of the new-born with boric acid, saline solution or sterile water, he should not forget that the responsibility for protection from the effects of acute purulent ophthalmia rests solely upon him. Two general principles must be observed; first, to cleanse by irrigation the conjunctival sac from purulent accumulations as frequently as the individual case may require, and, second, the maintenance of hygiene, including rest and nutrition. The intractability of acute local inflammation is increased by depressed constitutional condition and innutrition is sufficient to make rest and nourishment of supreme importance. Of the many local remedies employed in purulent ophthalmia, each has proved efficacious in the hands of different practitioners. Protargol, in 10 to 20 per cent. solution, has proved highly satisfactory, both for prophylaxis and also as a corrective application to the inflamed mucosa during the height of the attack. Phlyctenular affections belong distinctively to the period of late infancy and early childhood. This is one of the local manifestations of the strumous diathesis.

Eruptive Fevers of Childhood.—Closely allied to phlyctenular affections is conjunctivitis following the eruptive fevers of childhood. As a rule, in all these cases the old routine application of astringents should be discouraged. Two other forms of conjunctivitis require prompt constitutional treatment, namely, the croupous and the diphtheritic types. The first is rarely seen except as an accompaniment of depraved constitutional conditions. The treatment should be locally palliative, constitutionally nutritive and hygienic.

Syphilis.—Of the other dyscrasias upon which serious eye lesions are dependent, syphilis is undoubtedly the most common. From the viewpoint of the general practitioner, the ophthalmic lesion most in evidence in children with inherited syphilis is interstitial keratitis. Regardless of the value of mercurials in controlling syphilitic manifestations in later life, the essayist says there is abundant clinical evidence in favor of its exhibition, preferably by inunction, in children. This should be accompanied by the best known tonic and supportive measures.

Symphyseotomy.—At a recent meeting of the Chicago Gynecological Society, Dr. M. L. Harris reported a case af symphyseotomy. The patient was thirty-five years of age. Normal menstrual history; general health good; married April 25, 1900. First confinement Jan. 26, 1901. Prolapsed cord; dead baby. Craniotomy was necessary in order to effect delivery. Patient recovered. She became pregnant for the second time in December, 1901. As the time for confinement approached, she entered the Passavant Hospital, under the service of Dr. Hooper. Examination showed abdomen firm, not pendulous. Position of fetus, L. O. transverse; movements active. Measurements: Pelvis and spine, 27 cm.; crests, 28.5 cm.; Bis. trochanteric, 31 cm.; Baudelocque, 16.8 cm.; symphysis narrow. Conjugata vera, true, 8 cm.; false, 7.5 cm. Sacrum: Double promontory. Sacrum sharply curved; pelvic type; generally contracted, rachitic. Laceration of perineum of first degree; estimated weight of fetus seven to eight pounds; bi-parietal estimated at 8.5 cm.; occipito-frontalis estimated at 10.5 cm. In view of the patient's first labor and craniotomy having been done, and considering the measurements that were made of the pelvis, operation was necessary to effect delivery of a living child, and as the essayist was consulted concerning some operative procedure, he thought it a proper case for symphyseotomy, advised that operation, and it was done in accordance with a method described by the author several years ago, in an inaugural thesis presented before the society.

Life Insurance Urinalysis, Its Importance, Its Present Extent, and How Its Scope Can Best Be Broadened.—Dr. J. Allen Patton read a paper on this subject before a recent meeting of the Chicago Medical Examiners' Association in which he drew the following conclusions: (1) There should be no question of the urine's identity. (2) Very important to have urine passed at time of the examination, and time with reference to meals stated. (3) Note any difficulty of urination, and the physical characters of the urine, when first passed, and the changes, if any, after it has cooled. (4) Test the reaction of the urine carefully. (5) Determine the specific gravity with a reliable urinometer, or preferably with a balance, if one is convenient. (6) Apply tests for albumin and sugar carefully, allowing proper time for the reaction to develop, and exercising care in regard to the fallacies of the tests used. (7) Any abnormality of first sample obtained should be substantiated by examination of a second example. (8) Microscopical examination by examiners properly equipped for that work is the best method of determining the character of most abnormalities of the urine. (9) This additional work would require an additional fee guaranteed by the company, but to be paid by the applicant, if accepted, the work not to be done unless the applicant consents to it.

Arterio-Sclerosis of Retina and Choroid.—Dr. Charles H. Beard read this paper: Among other things, he stated that the first of the frequently noticed results of blood vessel disease in the retina was unwonted meandering in their courses. This applies not only to the lateral planes, but to the vertical ones as well. They rise and they dip. These flexions toward and away from the spectator seem to be mainly on the part of the larger twigs. This phenomenon is strikingly shown in the more advanced cases at the points where veins and arteries cross. The artery, being more rigid, seems not so much to leap over the vein, as the latter to depress itself. Another early and conspicuous sign of arterio-sclerosis is white lines, which accompany the large trunks from the lamina cribrosa for varying distances along their courses. This is thought to be pathognomonic of senile arterio-sclerosis and is to be differentiated from similar appearances which are the result of thickening of the adventitia, and obliteration of the perivascular lymph spaces, which often follow neuro-retinitis. In the latter the caliber of the vessels is not necessarily narrowed, as it is in arterio-sclerosis. The condition may also be simulated in another way by the rich framework of connective tissue which often normally surrounds the vessels in this vicinity and radiates from the disc. Added to the deception may also be physiological tortuosity of the vessels. As the process waxes and spreads come other changes. There occur infiltrations of the retinæ which are not necessarily visible, and these in turn become ingrowths which show themselves as narrowing of the blood column. These growths undergo various forms of degeneration, at one time revealing themselves as small, yellowish patches on the vessel, or as tiny white scales. Haab associates the last with syphilis. Hemorrhages, large and small, are apt to occur in all stages, and one can usually distinguish between the old, the more recent and the fresh ones by their color and general appearance. The larger hemorrhages are prone to originate at the vessel crossings or where large branches are given off. Later the clot may become organized and assume the look of white, fluffy cotton, connective tissue new growths, stained in spots with dull or bright blood. At a given period in arterio-sclerosis of the retina, the fundus may show all the features that have been associated with albuminuric neuro-retinitis, and the outcome may be optic atrophy. A not infrequent ophthalmoscopic picture in these cases of blood vessel disease of the retina is that which has been named embolism of the central retinal artery. With regard to the eye itself in cases of arterio-sclerosis, the utmost discretion should be exercised in the use of mydriatics, and operations upon that organ should be undertaken only after the most careful general preparation. By these means we may be spared participation in grave disasters, such as intra-ocular hemorrhages, which produce glaucoma and expulsion of the contents of the globe after cataract extraction.

CANADA.

Annual Meeting, National Sanitarium Association.—On the afternoon of Dec. 20 the annual meeting of the Board of Trustees of the National Sanitarium Association was held in Toronto, with Sir William Meredith in the chair. Dr. J. H. Elliott, physician-in-charge of the Muskoka Cottage Sanitorium at Gravenhurst, read the annual medical report, which showed that the official year which closed on Sept. 30, was the most successful year in the history of the institution, which has now been running five years. During that time 612 patients have been treated, and Dr. Elliott reported that during the past year 85 per cent. had apparently been cured or the disease arrested, while but 10 per cent. failed to improve. Regarding the Free Hospital for Consumptives on the same grounds, the secretary reported that 90 had been maintained during the first five months after it was opened. Of the 90 patients 50 came from Toronto and the other 40 from other parts of Ontario and the Dominion. An important part of the secretary's report is that which contains the announcement that a third sanitarium under the auspices of the Association, is shortly to be erected in Toronto. A very desirable building site is already owned. The sum of $25,000 has been promised for the erection of buildings on this site by a leading citizen of Toronto. The programme of the Association extends even beyond this, and a fourth institution is under consideration to be established on the Pacific Coast.

Dinner to Dr. Casey A. Wood, Chicago.—One evening last week, the professors and lecturers of Bishop's College Medical Faculty, Montreal, dined Dr. Casey A. Wood of Chicago at the Windsor Hotel. Dr. Wood, who is a graduate of Bishop's, was formerly professor of chemistry and later professor of pathology in his alma mater.

Appointment.—Dr. G. A. Charlton, Montreal, a graduate of McGill University, has been appointed resident physician to the Ottawa Isolation Hospital. Dr. Charlton, up to a short time ago, held a fellowship at McGill, under Professor Adami, and lately conducted a series of experiments regarding the serum treatment of scarlet fever. He is at present trying to discover a bacillus for scarlet fever, or confirming the findings of Class.

New Members of the Royal College of Surgeons of England.—The following Canadians have recently been admitted by examination to membership in the Royal College of Surgeons, England: Dr. Charles C. Bell, Toronto; Dr. William A. Creswell, Toronto; Dr. Robert J. Dwyer, Toronto; Dr. William A. Fish, Toronto; Dr. Joseph F. McKee, Toronto; Dr. Wallace A. Scott, Toronto; and Dr. William E. Struthers, Toronto.

The Canadian Hospital Tent has been adopted by the Imperial Government. It is the joint invention of Surgeon-General Neilson and a citizen of Ottawa, Ont. Lord Kitchener saw the tent in South Africa and was very much delighted with it.

Obituary.—The sudden death of Dr. William Stenning Harding took place on the evening of Dec. 19, at St. John, N. B. Dr. Harding was one of the oldest medical men in the province of New Brunswick. He was born at St. John in 1814, and studied medicine at Edinburgh, where he was graduated in 1836. He commenced practice in his native city, where he has enjoyed an extensive practice up to 1895, when he retired from active work.

CORRESPONDENCE.

OUR PARIS LETTER.

(From Our Special Correspondent.)

Paris, December 12.

HOSPITAL CHARGES IN FRANCE—GASTRO-ENTEROSTOMY BY C. MONPROFIT OF ANGERS, HARTMANN OF PARIS, AND ROUX OF LAUSANNE—THE EARLY OPERATION IN APPENDICITIS—TREATMENT OF TETANUS.

The question as to whether some hospital patients should pay for medical services rendered them, is one which has been freely discussed in France during the last two or three years. The recent law which obliged employers to pay for the treatment required by employes who had suffered injury in their service is in some degree responsible for this. To evade medical fees workmen and artisans were taken to the nearest hospital instead of calling their own physician. A meeting of French surgeons was held recently to discuss this, and Dr. Reynes of Marseilles proposed that the following measures should be carried out: The number of paying patients to be limited, their dues to be equal to the amount spent for their care, and the physicians and surgeons to receive a certain compensation for their services and the operations they carry out. Certain hospitals in the French provinces, such as those at Nevers, Lillebonne, Perpignan, Vesoul, Cannes and Montpelier, have changed their regulations, so that patients who can afford to do so are obliged to pay the physician of the hospital. A delegation was sent to Dr. Combes, the Minister of the Interior. The usual charge per day in the surgical wards of the Paris hospitals is five francs, and yet, strange to say, the employers, who send their workmen into these wards, are only asked two francs 50 centimes per day.

At the recent Congress of Surgery, held in Paris, the results of gastro-enterostomy were discussed by Monprofit of Angers, Hartmann of Paris, and Roux of Lausanne. Monprofit has performed 101 gastro-enterostomies, 15 by the anterior method of Woelfler, 75 by the posterior method of von Hacker, and 13 by the Y process of Roux. The posterior method would seem to be much better indicated. As for Roux' method it is the most perfect, but is more difficult and takes longer, and should therefore not be used when the patient is weak. Roux' operation lasts from 50 to 60 minutes, whereas von Hacker's only lasts half an hour. Dr. Monprofit only used linen thread for his sutures. Dr. Hartmann has performed this operation with a general mortality of 16.5 per cent. The number of fatal cases has, however, decreased since 1900, he having only lost four patients out of 37, or a mortality of 10.5 per cent. The results would be still better, if the patients were sent sooner to the surgeon, and Dr. Hartmann divides his patients into two categories: (1) Those sent by Professor Hayem and Dr. Loupault, who understand diseases of the stomach, and (2) those sent by other physicians. In the first division, there is one death out of 36 operations, in the second nine deaths out of 24 operations. Dr. Hartmann does not operate in ulceration of the stomach, when there is considerable hemorrhage, and when the ulceration is near the pylorus, he does not perform pylorectomy. Von Hacker's operation seems to him quite sufficient. Roux, of Lausanne, said that he did not share Dr. Hartmann's views on the surgical treatment of chronic ulcers of the stomach. As most ulcerations are found near the pylorus and may give rise to mechanical disorders, excision is better indicated, and as for extensive hemorrhage this required an immediate operation. Dr. Roux considered that the possible production of a "circulus vitiosus" with von Hacker's operation justified his own technic, which only required 45 minutes. Dr. Panchet, of Amicus, who is a young surgeon of the Provinces, has lately performed 22 operations for gastrectomy with not a single death. He considers Roux' operation the best, but uses Petersen's method when the patient is very weak.

The question of an early operation in appendicitis has been the subject of a good deal of discussion at the meetings of different medical congresses and societies. Broca's views, which were expressed at the Congress of Brussels last September, were the first in date. He considered it best to temporize in most cases, and such was the opinion expressed by most of the surgeons at this congress. At the Congress of Surgery, held in Paris, Dr. Thiery sought to show that by watching the patient it was possible to recognize if the case was to be severe or not. This last week, at the Academy of Medicine Dr. Richelot made a report on the same subject, in which he declared that no hard and fast rule could be established. A well-known surgeon of the hospitals confided to me a story concerning a case of appendicitis which had been operated on recently by a famous surgeon. The husband of the patient, who was an American, asked to have the appendix given him, to send it to London to be examined by a pathologist. The answer was that there was no lesion of the appendix.

At the recent meetings of the Congress of Surgery, the most important subject discussed was the treatment of tetanus, and Dr. Vallas, who was the speaker on this question, made a most exhaustive review of the question. The conclusions to be drawn from his speech are as follows: The preventive treatment has shown itself efficacious, and in all cases of suspicious wounds, 10 c.cm. of the antitetanic serum should be injected the first day, the same dose the third, and also the tenth day. This should be repeated in case the wound has not healed. Amputation is not of much benefit and should only be carried out when the condition of the limb is such as to justify this proceeding. Once lockjaw has made its appearance, the results are not so encouraging. Out of 373 cases, the mortality was as follows: 10 days' incubation, 141 cases, 80 deaths, or 57 per cent.; more than 10 days' incubation, 118 cases, with 24 deaths or 20 per cent.; undertermined incubation, 114 cases, with 41 deaths, or 35 per cent. Tetanus of the new-born and during puerperium are just as fatal as ever. Thirty to 40 c.cm. should be injected the first day, and this dose should be repeated daily until there is a change for the better. Intravenous injections do not seem to have caused any serious accidents, and the serum should be injected in 500 c.cm. of ordinary saline solution. Intra-cerebral injections are discouraged by Vallas on account of accidents seen, such as abscess of the brain and hemorrhage. but this opinion of Dr. Vallas is attacked by Dr. Championnière and Dr. Mannoury. Dr. Vallas also spoke of the results obtained in Italy by Baccelli's method. Out of 80 cases of tetanus there were only eight deaths.

SHORTENING OF THE ROUND LIGAMENT.

New York, Dec. 16.

To the Editor of the Medical News:

Dear Sir:—In the Medical News of Dec. 13 there appears an abstract of an article of mine entitled, Shortening of the Round Ligaments per Vaginam. From this I quote the following: "The round ligaments, when shortened at the external abdominal ring, are efficient in retaining the uterus in its normal position, when applied to cases of retrodisplacement uncomplicated by inflammatory processes. In a series of 130 cases treated in this manner the author has had but two failures, etc." This gives an entirely erroneous impression. From the context "in this manner" obviously refers to shortening the round ligaments through the vagina. By reference to the original article it will be seen that a long paragraph intervenes between the two sentences above quoted. That paragraph is devoted to the intra-pelvic shortening of the round ligaments, and obviously is what is referred to in the phrase, "in this manner."

J. Riddle Goffe.

29 West Forty-sixth Street.

METHYLENE BLUE AND QUININE IN THE TREATMENT OF MALARIAL FEVER.

To the Editor Medical News:

Dear Sir:—In the issue for Dec. 6 of your esteemed journal appeared an article by Drs. John T. Moore and W. L. Allison, on the above subject.

Allow me to call attention to some statements made in a lecture given by me at the New York Post-Graduate Medical School and Hospital, and published in the *Post-Graduate*, Sept., 1901. They read as follows:

"It was found that the protoplasm of the parasites shrank, became compressed and were colored blue, but that the methylene blue did not act on the nuclei of the plasmodia, and finally, that there existed an antagonism between the action of methylene blue and quinine, namely, that quinine destroyed the nucleus of the parasite, its chromatin, and methylene blue the plasma.

"Now we know that methylene blue will have a curative effect in those forms of malaria in which the plasma is most developed and quinine in those in which the nuclei are the most developed and the plasma more or less wanting. The form which is most decidedly affected by methylene blue is that of the crescents, which consist almost entirely of plasma, while on the other hand juvenile forms of plasmodia which have very little plasma remain unaffected by methylene blue, but are very sensitive to quinine. The full-grown parasites, the principal part of which consists almost entirely of plasma, are indifferent to quinine, but most sensitive to methylene blue; they are completely destroyed by it." A. ROSE.

BYWAYS OF MEDICAL LITERATURE.—XII.

TWO GENIAL DOCTORS.

THE word genial has come perhaps to have a lower meaning than it originally had. It means etymologically that a man has a special genius, is typically an individual and so worth the knowing and worth while being brought in contact with. In the December number of the *Criterion* there is an article, "Recollections of Dr. Oliver Wendell Holmes," by General James Grant Wilson, in which there is an interesting account of the relations between two of the greatest and most genial members of the medical profession who lived during the nineteenth century. They are our own Dr. Oliver Wendell Holmes, the autocrat of the breakfast table, and Dr. John Brown, of Edinburgh, the beloved author of "Rab and His Friends," a story dearer to the hearts of more English-speaking people, than any other of its size and character ever written.

Not long before Dr. John Brown's death, he said to a New York friend, then visiting him in Edinburgh, "I am a happier and prouder man to-day than I have been since Thackeray first wrote to me. I have just received a letter from Dr. Holmes, praising my pet, 'Marjorie Fleming' and 'Rab and His Friends.'" It is a pleasure to think that these two great, kindly men and genial physicians should have appreciated one another. Brown and Holmes were men whom anyone might envy and whose names will not soon be forgotten by the public, still less by the medical profession.

MARIE ANTOINETTE AND SOME MEDICAL HISTORY.

We are in the midst of a revival of interest in Marie Antoinette and her times. There are many things of special medical interest besides the psychological studies of the influences that made the nobility so blind and made the middle classes rush headlong to their destruction in that troublous period. Perhaps the most interesting thing with regard to the French revolution is that, notwithstanding its excesses and the number of lives it cost, the spirit which animated it led people to recognize the real rights of every human being, no matter how deformed or helpless he might be, better than ever was the case before. It was during the last 25 years of the eighteenth century that in France there began to be practised the proper care of the deaf and the dumb, the deformed, even the blind and then, above all, the insane. Pinel's striking off of the manacles from the limbs of the insane in the Salpetriére is only a symbol of the larger liberty that men were striving to obtain for human beings of all classes and conditions. There are certain things of medical interest in Marie Antoinette's career that are not generally known. The girl, of scarcely fourteen and one-half years of age, the daughter of Maria Theresa of Austria, found herself in peculiar circumstances in the rotten French Court, and married to the boorish and not over-intelligent Louis XVI. One of Louis' jokes that has recently been retold by one of the biographers of Marie Antoinette (a lady by the way), will serve to show the rather coarse nature of the monarch. It was the custom at the time to have the pictures of friends on bracelets, brooches, snuff boxes, chatelaines, belt buckles, combs, various articles of dinner service and the like. At one time the favorite hero of the hour in Paris was our own Benjamin Franklin. It became a fad among the women of fashion to have his portrait on many of their belongings. In the case of one young and rather handsome woman, the Comtesse Diane de Polignac, her effusive admiration for Franklin annoyed the king so much that he played a practical joke on her. He knew that she had the philosopher-scientist's picture on most of her table porcelain and so he had made for her at the Royal Manufactory at Sevres a bit of porcelain that is usually not exhibited to any but lady friends, with Franklin's portrait beautifully executed on the bottom of it.

Poor Marie Antoinette was very desirous to have an heir to the throne. Her mother, Maria Theresa, had had 16 children, and it was a tradition in the Austrian royal family that there should be a number of children. Some of the letters that passed between Marie Antoinette and her mother with regard to this matter, have been recently published in France. Louis XVI. suffered from a marked degree of hypospadias. This deformity of his urethra with practical absence of much of the penile portion, made it improbable that he should ever procreate children. The king was urged to have an operation for it, and there are some references to this fact in the correspondence noted above. It seems that a slight operation was finally done with a happy result as regards progeny, but unfortunately the offspring were only to make the mother suffer more in the years to come, when with her they were imprisoned and had to bear the hardships inflicted on them by the revolutionists. This is one of the few cases in which details of history, viewed from a medical standpoint, have come in to fill up certain gaps in our knowledge. There seems no doubt that within the next 25 years, if history is to be written with proper regard to the truth, there are many questions on which the views of medical men will have to be asked to enable a proper judgment to be made on certain questions.

LEFT-BRAINEDNESS NOT RIGHT-HANDEDNESS.

In addition to the Huxley Memorial lecture at Charing Cross Hospital, given this year, by Professor Welch of Johns Hopkins, there is a Huxley Memorial lecture of the Anthropological Institute of Great Britain and Ireland, which was delivered this year by Dr. Cunningham, Professor of Anatomy at Trinity College, Dublin. Dr. Cunningham selected as his subject the relation of right-handedness to left-brainedness. Right-handedness has existed as long as history runs and Dr. Cunningham considers that it has been acquired during the evolution of man by a process of natural selection. It is not because the right hand is more used, that the left brain came to have a better development, but on the contrary the original condition seems to have been a predominance of the left hemisphere of the brain and consequently a tendency to use the right hand more than the left. This left brain predominance is not a haphazard acquisition, picked up during the life of the individual, but a basic characteristic in the nervous system of the individual.

Dr. Cunningham considers that the predominance of the functional power and structural development of the left cerebral hemisphere rests upon a foundation in the nervous tissues themselves, which is the subject of transmission from parent to offspring. The exceptional cases of right-brainedness and left-handedness are due to the transfer of this structural peculiarity of the brain from the left to the right side, or, more probably, to a transposition of the two cerebral hemispheres. Such partial organic transpositions are not uncommon and even complete; thoracic and abdominal viscera transpositions are not rare.

This puts the question of right-handedness and left-handedness on an entirely different plane from what is sometimes assumed to be its causation. Attempts usually futile, are often made to train children who show a predisposition to use their left hand into the employment of their right hand. This is almost sure to result in awkwardness, and delay the normal development of the individual. Such ordinary actions as writing, and the use of eating utensils may well be acquired with the right hand, but the attempt to substitute the right-hand for the left for most actions in persons who are evidently right-brained and left-handed and not the opposite is apt not to have good results.

WOMEN'S DISEASES IN THE MIDDLE AGES.

It is sometimes thought that it is only in our day that women suffer so much from so-called women's diseases. As a matter of fact it is only in our day that there is any relief from them. The collection of surgical instruments found at Pompeii contain a number of gynecological instruments, showing that in the olden times something at least was accomplished, or attempted, for the relief of women's ills. All of this knowledge seems to have been completely lost afterwards, for, during the Middle Ages, there are very few traces of any attempts to know or treat rationally the affections of the genital tract in women. That such diseases existed in abundance and were the source of untold sufferings, we have every reason to believe, not only from the nature of things, but from more actual evidence. Dante, for instance, in a famous passage, at the close of the Sixth Canto of the Purgatorio, can find no figure better suited to express his idea of the tossing, disquiet, unrestful inappeasable Florence than that of a poor woman suffering from some painful disease. He says:

"How often in the time to memory known
Hast thou changed laws, coins, polity and right
And altered all thy members, one by one.

"And if thou well reflect and see the light
Thou shalt behold thyself as woman sick
Who on her pillow finds no rest at night
And seeks to ease her pain by turning quick."

ANEMIC ANESTHESIA OR SUGGESTION?

The following account of the recent experiences of a physician traveler, which has been making the rounds of the secular press, will be of interest to those who look for explanations of anesthesia, as well as to those who seek to make the origin of the phenomena of hypnotism and allied states clearer.

Dr. Steiner, a Dutch physician, recently made a curious study while traveling in Java. He chanced to stop one Sunday at Sourabaya, where the Javanese maintain a large hospital for prisoners. His notice was directed to the fact that in the treatment of such cases as necessitated an anesthetic the native physicans did not resort to a drug, but instead they were manifestly reducing their patients to a condition of stupor by compressing the carotid artery with their fingers. The physician was so much impressed with this primitive method of rendering the patient at least partially insensible to pain that he made a careful study of it. He discovered that this method of anesthesia, although unknown to modern surgery, was, in all probability, in vogue among the ancients. The very name of the carotid artery tends to confirm the belief of Dr. Steiner, for it is frequently referred to as the *arteria soporifera*, sleep-giving artery. A name very similar to this is still applied to it in Russia. Describing the results noted in the treatment of Javanese prisoners, a writer in a Paris medical journal says: "Under the influence of this treatment the patient was seen to grow restless; at the same time his respiration became quicker and deeper; then the head fell backward. The compression of the neck was stopped, and the patient, after keeping for some instants the same immovable attitude of a sleeping man, opened his eyes with an expression of astonishment, as if he had been rudely awakened."

This, of course, might well have been a condition of hypnosis induced by suggestion, the cervical pressure being only an accompanying manipulation that induced the patient to submit more readily. The subject is, however, worthy of further study, some of which Dr. Steiner has already given it.

"These facts appearing to be worth more careful study, the author made a series of experiments on 30 Javanese, two of whom were women. He first applied the process as it had been taught him by the curer of Sourabaya, but later he was led to modify it so that he could better observe the subject under experiment. Of the 30 subjects so treated only five did not respond; with all the others there suddenly came on a complete loss of sensibility and thought, so that in one case the author lanced an inguinal abscess without the knowledge of the patient."

A NEW RELIGIO-MEDICI.

Sir Henry Thompson, the distinguished English surgeon who has now reached the ripe age of eighty-two, but with intellectual powers unimpaired, wrote in the early part of the present year an essay on "The Unknown God," which appeared in the *Fortnightly Review*. Now at the request of many friends the essay is reprinted with some slight modifications and some footnotes. It forms a very curious and interesting expression of the thought of a mature medical man at the beginning of the twentieth century. Dr. Thompson asks that the essay should be considered an attempt to seek by a carefully made induction from available data some certain assurance respecting the influence which the infinite and eternal energy from which all things proceed has exercised on man throughout his long career upon earth.

Curiously enough, Sir Henry agrees with Mr. H. G. Wells, who in his "Anticipations, an Experiment in Prophecy," noticed some time ago in these columns, considers that form of religions will ultimately disappear, or at least that the religious part of the community will be divided into two distinct camps or classes, those who enjoy complete liberty of thought and action and practise the manly virtues which are associated therewith, and, secondly, those who become devotees of the old Papal Church. Sir Henry is of the opinion, however, that the infinite and eternal energy from which all things proceed will not ever remain wholly unknown or unknowable, but may be still further elucidated as human faculties become more highly developed in the progress of time and rendered capable of receiving additional enlightenment respecting its attributes.

PHYSICIAN AND ACTOR.

In a paper on "One Century of Acting," in the last *Criterion*, Mr. Charles Henry Meltzer has some notes with regard to a well-known English actor, formerly a physician, that physicians generally will find of interest. He says: "In the past 40 years, during which Mr. Charles Wyndham, (now Sir Charles), the excellent artist, has adorned his profession, he has played many parts, ranging from light farce to poetical comedy and romantic drama. The rising generation must find it hard to realize that this well preserved middle-aged gentleman, whom John Drew has for some time past adopted as his model, served in the War of Secession as a doctor. That he did so, however, is on record. Yet not long ago he appeared as the relatively youthful hero of Rosemary. Since then he has played in Cyrano de Bergerac and in The Jest. Within narrow and well-defined limits, Charles Wyndham is even now facile princeps in his profession. He has polish, ease, and an exceptionally fine appreciation of the more delicate forms of wit. In certain parts, calling for the ability to suggest the tear in the voice, he has had few equals. We are consoled at Mr. Wyndham's abandonment of the medical profession, since he has succeeded so admirably in *the profession par excellence,* according to its members. Mr. Wyndham is one of those who were recently honored by knighthood, because he seemed to represent a typically successful man in the profession that he has chosen. Perhaps the medical profession will be satisfied to part with a few more, if they should have ambitions of the same kind and we might thus find a satisfactory issue for the overcrowding question which is becoming so urgent.

THE GOPHER ASCETICS.

A recent issue of the New York *Sun* has the following excellent account of a modern fasting movement in Minnesota:

"For the benefit of science, we have noted many plans and systems for the reduction of poverty and too-too solid flesh, the promotion of longevity and the testing of the human constitution. Half the world is on a diet already and it is strange that the price of foods doesn't fall before the decreased demand. But patience! Even if dieting puts no money in the purse, think of the moral satisfaction and superiority which it brings. In Buddhist phrase the dieter 'accumulates merit.' You can tell him by his air of virtuous self-consciousness; and if he bores you with the story of his cure and drips with propagandist zeal, his good intentions are his apology.

"The burghers of St. Paul and Minneapolis cities once charged with 'padding' their census returns, are now unpadding themselves. A Minneapolitan business man hasn't tasted food for 49 days. Fifty days ago he was a desperate dyspeptic. Now he is a rejoicing eupeptic; and he has attended strictly to business all the time. He has lost 18 pounds, and found happiness. 'With what lasting results remains to be seen,' sneers some luxurious and gorbellied doubter. The moral triumph will be lasting even if some of the banished pounds and dyspepsia come back. Two paralytics have fasted 49 and 50 days respectively and believe themselves to be 'completely cured.' See how admirably faith joins fasting. A woman who has fasted for 28 days 'rejoices that she is at last free from what she had long believed to be chronic bronchitis.' Even if she suffered merely from a 'claim' of bronchitis, she has settled the 'claim.' Another woman has fasted 19 days 'for the routing of liver indigestion.' The liver is the toughest old sinner in the insides; but it can't resist the no-food, no-disease theory.

"Disease seems complex on account of the multitude of long names which the doctors have given it. Perhaps mankind would have been a great deal healthier if the Greek and Latin languages had never been invented. If we understand the Gopher theory, disease is one, food; and cure is one, abstinence from food. Paralysis, chronic bronchitis and the rest of the cursed brood of itises are to be conquered by the same easy means. There is a beautiful simplicity in the Minneapolis and St. Paul system, although it seems a little cruel to the butchers and bakers and grocers. The female Galen who is the director of this fasting school finds it 'amazing that such a simple and rational process of cure should meet with such strenuous opposition.' She forgets the economic disturbances and displacements which the general adoption of her therapeutics would cause.

"One patient has died under the treatment, but what of that? Thousands of folks die of a surfeit. Can't one be allowed to die of a fast?"

THE ILL HEALTH OF AUTHORS.

It is a peculiar fact that the letters and other writings of DeQuincey, Carlyle, Darwin, Huxley and Browning, liberal as they are with references to the continued ill-health of those great writers, have not before this suggested to the medical profession an opportunity for research into the causal factors of those physical conditions. That the opportunity has not until now been recognized in its proper light is evidenced by the hitherto total absence of any work dealing with this subject. Dr. George M. Gould's Biographic Clinics (P. Blakiston's Son & Co., Philadelphia), which is devoted to this neglected subject, should, therefore, prove a most unique and valuable contribution to biographical and medical literature. The work is announced for publication in December. Dr. Gould has gathered from the biographies, writings and letters of the five named men every reference to their ill-health. Each endured, as is well known, a life of suffering which made almost every day a torment and by which their work and worth as an asset of the nation and civilization was conditioned and often rendered morbid. The cause of their affliction was an utter mystery to their physicians. No explanation explained, and no cure cured. Dr. Gould has gone into the "why" of this very thoroughly and the conclusion reached by him, from logic and from a careful summary of the clinical symptoms, is that each of the writers suffered from eye-strain, and that scientific correction of their ametropia would have transformed their lives of misery into lives of happiness. A history of the discovery of astigmatism and eye-strain, with a discussion of its indications and responsibilities, completes the work. It is interestingly written, and will undoubtedly meet with a ready sale among medical men and those interested in the works and lives of the quintette of great writers.

SOCIETY PROCEEDINGS.

THE HARVARD MEDICAL SOCIETY OF NEW YORK CITY.

Regular Monthly Meeting, held Saturday, November 22, 1902.

The President, William B. Coley, M.D., in the Chair.

The scientific business of the evening was begun by the presentation of printed slips, arranged by Dr. Follen Cabot, containing instructions for patients suffering from either one of the more important venereal diseases. These instructions are meant to relieve the physician of explaining many things that are time consuming and some of which may easily be missed during the course of an ordinary consultation. When the patient is discovered to be suffering from either gonorrhea or syphilis, the appropriate slip is handed to him and then the physician is sure that no important warnings with regard to the nature of the disease, its possibilities of being conveyed to others, or of causing serious harm to the patient himself by the infection of other mucous membranes, are neglected. These slips have already been adopted by the Presbyterian Hospital of New York City for distribution to patients suffering from these diseases and a certain number of physicians have taken up the practice of handing them to private patients. They can be procured through Dr. Cabot himself.

Instructions to Those Having Gonorrhea or "Clap."—Gonorrhea or "clap" is a local contagious disease which requires treatment until the physician pronounces you cured. To avoid infecting others and to prevent complications, as bubo, stricture, swollen testicles, etc., the following rules should be observed: (1) During the first few weeks walking should be limited. When the discharge is profuse you should keep off your feet as much as possible. (2) Do not use alcohol in any form as it always prolongs the disease. Drink milk, tea, vichy or seltzer and from six to eight glasses of water during the day. (3) Avoid all sexual relations until you have been pronounced cured by your physician, as the disease may be given to a woman even after the discharge has apparently ceased. When it is present you should avoid sexual excitement, as erections always aggravate the disease. (4) Always wash the hands after handling the parts. The discharge if carried to the eyes will cause blindness. (5) Sleep alone and be sure that no one uses any of your toilet articles, particularly towels and wash cloths. (6) Never lend your syringe to anyone and as soon as you are well destroy it. (7) Be sure that the bowels move every day. If they are inclined to be constipated take a dose of Rochelle salts before breakfast. (8) Do not use mustard, pepper, horseradish or stimulating sauces on your food.

Instructions to Those Suffering from Syphilis.—Syphilis is a constitutional disease. It is "in the blood." Local remedies and taking medicine for a few months will not cure you. You must be treated for three years. The effects of this disease are far reaching, and if treatment is neglected much trouble and suffering may be caused, not only to yourself, but to others. The following rules must be observed during the first year: (1) Sexual intercourse should not be indulged in. (2) Alcohol in all forms should be avoided as it always aggravates the disease. (3) Do not smoke or chew tobacco. (4) Sleep alone. (5) Under no circumstances should any one be allowed to use your toilet articles, as towels, brushes, combs, razors, shaving brushes, etc. (6) No article that has been in your mouth should be used by others, as tooth brushes, tooth picks, pencils, pipes, cigars, cigarettes, forks, spoons, drinking cups, etc. (7) You must not kiss any one, especially children. (8) Brush your teeth night and morning and keep your mouth clean. (9) If you have bad teeth, have them attended to by a dentist, and be sure to tell him that you have syphilis, so that he can take necessary precautions and avoid the possibility of infecting others. (10) Acids in food and drink should be limited.

Practical Instructions.—Dr. John H. Huddleston said in discussing Dr. Cabot's slips that the instructions are eminently practical, concise, yet complete. He suggested that copies of them should be sent to the Board of Health with the idea that their distribution to patients suffering from venereal disease should be recommended for adoption in the various dispensaries under control of the Board of Health. It seems likely that their distribution will accomplish not a little in preventing the spread of venereal disease.

Dr. Howard Lilienthal said that these slips are especially commendable because there are no words wasted in them, and because they are so simple. There is nothing that any patient of ordinary intelligence can not readily understand and the dangers of causing infection of others, are clearly and unmistakably pointed out.

On motion Dr. Huddleston's suggestion that the slips be sent with the Harvard Society's recommendation to the Board of Health was unanimously adopted.

Innocent Syphilis and Its Dangers.—Dr. Dawbarn pointed out how important it is that syphilitic patients in hospitals should be warned of the dangers they subject others to, and should be taught how to help in preventing the spread of their disease. He added that syphilis is much more common in hospitals than is considered and physicians and surgeons particularly need to exercise the greatest care in order to avoid contracting the disease. In French hospitals carefully prepared statistics seem to show that 10 per cent. of the patients are sufferers from syphilis. It is not unlikely that our proportion of syphilitic patients, especially in charity institutions, is not much less than this. It is because of this that rubber gloves are an important thing for the surgeon himself as well as for his patient. Patients are protected from septic infection, surgeons from syphilitic infection. Authorities on venereal diseases, such as Dr. Bulkley, say that syphilis is extremely common among physicians and is contracted by various means either scratches or the infection of small wounds of various kinds in the course of their professional duties. Within a very short time one promising young surgeon in New York has died from brain syphilis, as the result of a chancre acquired from the prick of a needle while sewing up the lip of a syphilitic patient. Dr. Dawbarn considers that the spread of knowledge with regard to venereal disease is sure to do good and that Dr. Cabot's slips, which seem to be an improvement over certain instructions drawn up with the same idea before, are especially to be commended.

Chemistry of Feces.—The paper of the evening on this subject was read by Dr. John H. Huddleston. At present the clinical investigation of the feces, has but very little clinical importance, in fact none for the ordinary practitioner. The subject is growing in importance, however, and is attracting more and more attention. In 1899, in his book on clinical diagnosis, Musser said that the presence of peptones and of certain bile pigments have some clinical significance, but beyond this, the chemistry of the feces was of no import. Sahli and von Jaksch devoted more space to it, but still did not insist much on it. Of late a book on the subject by Schmidt and Strassburger has attracted attention, and shows how the subject is developing. So far the chemical methods of investigating the feces, have been transferred from the corresponding methods for examination of the urine. Owing to the daily variations in quantity and character of feces, they must be collected for three days and the average of 24 hours taken as a sort of standard. In order to be of special significance, the patient should be fed by a test diet for at least a day. As the feces lose certain of their volatile products, when dry, fresh material as a rule is required for examination. The weight and reaction of the feces are important and then various chemical reagents are employed to show the presence of certain material. Investigation by distillation is sometimes employed and the residue dissolved in alcohol and ether for the purpose of estimating the biliary salts and acids, cholesterin, etc. The quantity and quality of excrementitious material passed depends, (*a*) on the amount and character of the food; (*b*) on the excretion of material from the body after it has been used up in metabolic processes, data for this estimation are obtained from the stools of professional fasters; (*c*) on the rate of peristalsis, which if delayed may lead to greater absorption and if hastened may prevent the absorption of material, which would otherwise find its way into the system; (*d*) on the individual absorbing processes; (*e*) on the bacterial flora present and the changes which they induce in the culture media in the intestines on which they grow.

Acid and Alkaline Reaction.—The outer part of solid feces may often be alkaline, when the inner part is acid. When feces are strongly acid, this is usually due to the presence of fatty acids. Fermentative processes generally cause acidity. Putrefactive processes on the other hand, cause an alkaline reaction. An exclusively milk diet gives a strong acid reaction in the stools. A meat diet is apt to be neutral or alkaline. Mixed diet produces a neutral reaction in the stools. The nitrogenous material in the stools is always increased whenever the absorbing processes are disturbed. For instance when there is an increase of metabolism, or in tabes mesenterica.

Fats and Soaps.—The fats and soaps found in the stools are sometimes of clinical significance. Fats that melt at low temperatures are better absorbed than those whose melting point is higher. The melting point of the fats usually found in the stools is at least 10 per cent. above that of the ordinary fat-melting point. Qualitative examination for fats is easy. Their presence may be recognized by the unaided eye. Quantitative examination is difficult, however, and as this is the only method that would give exact data, the questions of fat in the stools must be further developed. Sugar may occur in the presence of diastase in the large intestine which may form this material. Bacteria also may break the cellulose sheets of starchy vegetables with the production of some sugar. The closure of the pancreatic duct does not cause the presence of starch in the stools, though this used to be asserted. Heart disease may increase the amount of starch in the stools, because of interference with digestive processes generally.

Intestinal Calculi.—These are usually formed around a center that was originally a biliary or a pancreatic calculus. They may occur as the result of intestinal concretions around the foreign body. At times true intestinal calculi are found, consisting of a core of organic matter, incrusted with inorganic salts. Usually they have existed for some time before reaching the size at which they pass from the intestines or produce some serious pathological conditions for which they have to be removed.

Clinical Significance.—Dr. Edward A. Foote, in discussing Dr. Huddleston's paper, said that he had recently seen several rounded rather hard bodies in the feces of a patient suffering from cancer of the rectum. The cancer had caused an occlusion of the rectum and an opening had formed between the rectum and the vagina through which particularly the more fluid portions of the feces found their way. This led to an inspissation of the remaining feces and the formation of hard brown more or less rounded lumps. These were not true calculi, but are evidently well on their way to the formation of such bodies and illustrate how intestinal concretions may be formed.

Dr. Howard Lilienthal said that the occurrence of light-colored stools, in which nevertheless there is some bile pigment, shows that medical men and surgeons cannot be too careful in judging entirely from the color of the stools, as to the occlusion of the biliary duct. The presence of leucohydrobilirubin should always be looked for in these light-colored stools and its presence may save an unnecessary operation. If the color can be restored by some simple chemical reagent the house staff of hospitals should become acquainted with the reagents necessary in order to make assurance of diagnosis possible.

Dr. Dawbarn said that at present two forms of bacteria, the *bacillus coli communis* and certain pyogenic micro-organisms, had been found as the cause of biliary concretions. It would be interesting to know what form of bacterium was considered to be responsible for the formation of enteroliths, or intestinal concretions.

Anomalous Heart Case.—Dr. Charles Schramm presented a boy of twelve whose father confessed to having had syphilis before his marriage and whose mother had had two miscarriages before the boy's birth. The labor was rather difficult, though the child does not seem to have been locally injured. The baby proved hard to nourish and at the fifth month a heart murmur was noticed. Some time later it was noticed that the apex beat was rather to the right of the sternum and that a loud murmur could be heard over the entire chest in front and behind. The boy suffered from scarlet fever at seven years of age and had two attacks of measles, one before he was a year old and one at nine years; besides this he suffered from a number of attacks of tonsillitis, so that he seems to have been especially susceptible to infectious diseases. At the age of about ten years a painful swelling developed over his right tibia. This was diagnosed as syphilitic peritonitis, by Dr. Schramm confirmed by a consultant. The boy improved under antisyphilitic treatment. Several years ago he got lost while out in the country and had to walk for many miles. When he came home for the first time he complained of palpitation, pain in the chest and discomfort. Since then he has been perfectly well and has had no symptoms from his heart.

Differential Diagnosis.—The exact diagnosis of the condition present is very difficult. The murmur was noted so early that it seems probable that it was congenital. At the present time there is an area of dulness between the nipples along the line connecting them. The dulness is greatest on the right of the sternum and over this part of the chest a tremor can be seen and a thrill can be felt. This points to a stenosis of some important valve and as congenital lesions are usually at the pulmonary valve, suggests pulmonary stenosis. The murmur heard occurs during the systole and is evidently due to the contraction of the ventricle forcing the blood past a narrowed orifice. It is possible that the aortic orifice may be affected. The amount of heart dulness on the right of the sternum, however, seems to point to a very much enlarged right ventricle. This is best accounted for on the theory that the obstruction of the pulmonary orifice has led to hypertrophy of this right ventricle.

Dr. Potter in discussing the case said that lesions of the pulmonary valves are very rare and that usually in stenosis of the pulmonary valves the murmur produced can be followed into the lungs. This is not true in this case, as there is no murmur traceable from the ordinary region of the pulmonary valves into either lung. The murmur can be followed somewhat into the vessels of the neck and the pulse is small, indicating some obstruction in the ordinary arterial circulation. These facts seem to indicate an aortic stenosis rather than a pulmonary stenosis.

Dr. Spooner of Boston said that the murmur is heard on the left of the sternum quite as well as on the right, and is of the loud character, yet anomalous qualities that are associated especially with congenital lesions.

New Plastic Method for Hypospadias.—Dr. Foote described a case of not very marked hypospadias in which he was able to close the groove that represented the urethral canal by means of part of the foreskin. In the patient the hypospadiac opening of the urethra was situated one-half inch farther back than it should be and the frenum and the lower part of the foreskin was missing while the glans penis was grooved underneath. To take tissues from the sides of the penis, as is usually done, frequently leads to tension and failure of the operation or the presence of cicatricial tissue that is subsequently bothersome. In this case there was a hood of tissue over the glans penis, representing a redundant semi-foreskin. This was loosened from its fastenings, except at each side of the penis and being passed over the glans, somewhat as the bail of a pail would be carried from side to side and thus gave an abundance of tissue for closing the groove and making the urethra complete.

Conjugal Syphilis.—Dr. Daniels said that the question of syphilis in husband and wife sometimes makes one of the most difficult problems in ordinary practice. The question always is, shall the wife be told her condition? If she is, domestic trouble impends. If she is not, there is danger that she may communicate the disease to her children, or to female relatives, and that she will not take proper precautions with regard to herself nor undergo treatment for a sufficiently long time. On the other hand, if without telling her the exact nature of her disease, the physician attempts to insist on her taking such precautions as not allowing the use of towels, napkins, handkerchiefs, cups and saucers, table utensils, to other members of her household, and not to kiss her children, there will almost surely be a suspicion aroused, and she will find out one way or another. Dr. Daniels has had a case under his care recently in which the woman presented many of the symptoms of syphilis. She was of excellent character, moving in good circles and a thoroughly domestic woman. Dr. Daniels sent for her husband who said that if his wife had syphilis, there was no reason to think that she should have it from any one else except him. He had never had any symptoms, so far as he knew, of the disease, however, and was not suffering from it at the present time. A careful examination was made and the only suspicious thing that could be found, was a spot somewhat discolored and rather tender on the hard palate. There was no lesion on the penis and no symptoms on the skin. Dr. Daniels was not sure, and sent the man to a specialist who also was not sure. Later, however, the development of other symptoms showed that the case was really syphilis. The man confessed that it might have been possible for him to have acquired the disease from kissing a woman whose reputation was no better than it ought to have been. Dr. Daniels was in a quandary as to what should be done. The husband naturally does not want to have his wife frankly told that she has syphilis. To leave her in ignorance would expose her children and some other near relatives to the contagion of the disease.

Innocent Syphilis.—Dr. Follen Cabot, in discussing Dr. Daniels' case, said that it is often possible to impress upon people the idea of the frequency with which syphilis occurs, without necessarily being a venereal disease. Patients may, because of this, be told that they have syphilis and be required to take all the precautions necessary to prevent its spread and yet not suspect that there may have been any criminality involved in the manner in which it was acquired. It does seem important to save innocent children from the danger of infection with so serious a disease. Some risk of trouble between husband and wife may even be taken for this commendable purpose. As a rule, however, the Doctor can manage to put the case in such a way as to lead only to a gradual realization of the real condition present, though at the same time there is absolute insistence on the following out of instructions and precautions. Each case is individual in this matter and no general principle can be given.

Thyroid Dislocation of Hip.—Dr. William B. Coley described the case of a man of seventy who fell from a height of some 10 feet and struck on his hip. The patient did not know exactly how he landed. The head of the femoral bone could be felt in the perineal region just anterior to the tuberosity of the ischium. It is very rare to have a dislocation rather than a fracture of the bone at seventy years of age. The patient did not have relaxed ligaments around his joints, nor was he very thin and spare—such a man as might be expected to have very free play of joints. On the contrary he was very strongly built. The directions for replacing a thyroid dislocation are often not given in the text-books because the condition is so rare. When called to the case, Dr. Coley knew that it was dislocation of the hip and took a manual of dislocation with him, as the patient was many miles from the city, but the particular manual selected did not mention thyroid dislocation at all. A full description of this case, with an illustration, will appear in a subsequent number of the MEDICAL NEWS.

Hemianopsia.—Dr. Huddleston reported the case of a man of seventy-two who suffered from hemorrhage into the brain. As a result of it right hemianopsia developed. No other persistent symptom was noted after the seizure. His hemianopsia affected, however, not only his view of objects looked at with the eye, but also affected the mental picture of objects called up by memory, when for instance the eyes were closed. If the man recalled scenes of his boyhood, he could see only half of the pictures of the things as they really existed in his memory. Dr. Huddleston does not know of a report of a similar case and wished to ask opinions as to whether the condition were hysterical, or if it were a further manifestation of the hemianopsia, due to a true organic lesion.

SOCIETY OF ALUMNI OF BELLEVUE HOSPITAL.

Stated Meeting, December 3, 1902.

The President, Robert T. Morris, M.D., in the Chair.

Report on Cases of Fracture of the Skull.—Dr. F. S. Dennis made this report. He said that modern pathology had shown that intracranial tension required surgical interference, though the exact line of demarkation between conservatism and bold operative interference was not clearly defined. It was most important to differentiate clearly between surgical compression and surgical pressure. The phenomena connected with concussion were often transitory and as a rule there was no important lesion of the brain. Fraenkel maintained that without consciousness no concussion of the brain can occur—a fact of great medico-legal importance. Concussion was found both in fractures of the skull and in trauma without fracture. His own studies indicated that the more highly the intellectual faculties were cultivated the greater the degree of shock following the head injuries. A striking instance of this was to be found in a boy whom he was about to present to the Society. He was stupid and illiterate, and after falling from the sixth story, picked himself up and walked again to the sixth story, without exhibiting any shock or concussion. It was found that he had a compound comminuted fracture of the skull. By the term cerebral compression was meant the application of any force acting from without upon the brain, in part or in whole. These forces might be blood, bone, pus or foreign bodies. On the other hand, by cerebral pressure was meant the application of any force acting from within upon the brain causing the latter to impinge upon the bony walls of the cranial cavity. This condition was observed in diffuse meningitis, surface blood effusions and in cerebral edema. If the vasomotor system failed, the blood pressure fell below the intracranial pressure, and the patient succumbed. The difference between these two conditions was illustrated by several cases presented. In one case of compound fracture of the skull there was a wound of the lateral sinus requiring packing with gauze. This caused paralysis, which disappeared as the gauze was gradually removed from day to day. When the gauze was removed, the movements in the legs were increased to such an extent that they could be flexed upon the abdomen. Observations on the blood pressure in the radials before and after the removal of the gauze was interesting in connection with this study of cerebral compression due to the mechanical pressure of gauze over the motor centers of the anterior and central motor convolutions. The patient presented was a young colored man who had been injured by the explosion on election night. On reaching the hospital, the bleeding was terrific, requiring the packing in of about three feet of gauze. Another case illustrating cerebral pressure was that of a child who fell three stories and struck upon the head. The child was in the deepest coma with slight Cheyne-Stokes respiration and high arterial pressure. The injured scalp was incised, and a linear fracture found. Through the cleft, blood and cerebral substance flowed. The child remained unconscious for over a week. The pulse and respirations rapidly fell to the normal, and so did the temperature, though there was a secondary rise occasioned by an encephalitis. The child was blind during the attack of encephalitis, or for a period of two weeks. Some months following the injury the child was found to be bright intellectually; there were no abnormalities of gait, in fact, it was apparently a normal child. At the time of the operation, Dr. Dennis said he felt that the case was hopeless and that death would probably occur within an hour or two, but he had made the exploration, feeling that it was called for, and he was now convinced that the operation had certainly saved the little one's life. The next case presented also illustrated cerebral pressure. and, in addition, the fact that operative interference was not indicated. The patient had been admitted to the hospital suffering from hematemesis, but there were no symptoms pointing to a serious stomach lesion. There was found to be deafness on the right side, and the patient complained of a certain fulness in the head towards the base of the skull. The loss of hearing had occurred at the time of the accident. A diagnosis was made of fracture of the base of the skull. On the third day a well-marked ecchymosis appeared behind the mastoid, making the diagnosis of fracture of the posterior fossa positive. The hematemesis was explained by the passage of blood through the fracture and a fissure into the Eustachian tube, and from there into the stomach. The arterial pressure became less within two or three days after the injury, and although optic neuritis was present in both eyes for a time all of the symptoms gradually improved, and the man could now walk fairly well, although he became dizzy if he looked down.

Another patient presented was a child who spent most of the time shrieking and crying, and evidently suffering from great cerebral tension. 'It was proposed to reliev this tension by operation.

It should be remembered, Dr. Dennis said, that th brain is incompressible, and that the cranial cavity i incapable of expanding. If a foreign body were sufficiently large to reduce the intercranial space one twelfth death would result. Cannon had shown tha anemia of the affected area alone was not the onl factor in the production of intracranial pressure. Ther was also increased osmotic pressure in the brain. Sometimes very slight lacerations were followed by death probably because of the development of an edema afte the injury. Trephining of the skull relieved the pressure, and often saved life.

With regard to treatment, he was convinced that dee coma called for operation at once; in the absence o such coma he was in doubt in many cases as to the necessity for operation. The indications for operatio were clear when the skull was injured, but when ther was intracranial pressure without injury the surgeo must be in doubt. There are really two classes: (1 Those in which the intracranial tension was sufficien to produce profound coma, and (2) those in whic this tension was not sufficient to produce coma. Th condition of the patient, after a study of the symptom for three or four days, afforded the best guide as t whether or not an operation should be done. If th arterial pressure rose to a certain point, and remaine stationary, it was safe to delay operation.

Dr. John F. Erdmann said that the reader of the pape had made a beautiful physiological study of this subject of cerebral pressure, and the paper presented th clinical aspect with exceptional clearness. When th case presented at the outset the deepest coma, it wa necessary to observe the patient for several days. case was mentioned in which a man had shot himsel in the head at the junction of the parietal and fronta regions, injuring the superior longitudinal sinus. Th fracture was elevated and the fragments removed, an then the hemorrhage was controlled by packing in strip of gauze about three feet long and two inches wid It was thought best on the eleventh day to do a motor cortical operation. Two ounces of clot were remove and Dr. Erdmann passed his finger into the channe made by the bullet. Immediately after the remova of the disk of bone, and of the blood the patient regained the function of the leg and began to regain th function of the arm, and could also speak. Another cas in the same hospital was that of an old man who fel off a car, and when picked up was paralyzed. A motor cortical operation was done and four ounces of blood clot removed. The patient passed into still deepe coma, and finally died. Nothing was found at autops except edema of the brain.

Dr. Robert T. Morris said that a certain amount o irritation produced by the packing could be overcom by interposing between the bone and the brain gutt percha tissue or, better still, Cargile membrane. Thi same membrane could be used to bridge over a ga in the skull left after operation.

Dr. Russell Bellamy recalled a case seen in the alcoholic pavilion in the summer of 1893. The man wa supposed to have been injured in the head, and wa suffering also from alcoholic coma. There was a sligh lacerated wound over the parietal eminence. It wa cut down upon and a slight fissure found. The nex morning the man was in convulsions, the left hand arm, shoulder and a partion of the face being affecte He died within an hour, and at the autopsy a very larg blood-clot was found over the fissure of Rolando, an the brain was very greatly compressed.

Dr. Erdmann said he did not think the gauze in his case was the cause of the paralysis. Ten years ago he had received at the Workhouse and Almshouse a woman with a contusion and laceration at the left side of the occipital protuberance, and the paralysis corresponded to the seat of the injury. On cutting down upon the right side a large blood-clot was found and removed, and the patient recovered.

Pelvic Suppuration in the Female.—Dr. A. Brothers read this paper. He said that the suppurative process ordinarily originated in the Fallopian tubes, the ovaries or the neighboring vermiform appendix. Pelvic suppurations were anatomically divided into: (1) Adnexæ and (2) connective tissue suppuration. Both conditions were sometimes merged in the same patient, or could not be differentiated; nevertheless this division was of practical value. Pelvic suppuration occurred for the most part during the child-bearing period. His records showed only five under the age of twenty and five above the age of forty. He had been surprised at the large number of cases in which gonococci were found, even when such infection was not even suspected. The chief sources of pelvic suppuration were trauma, appendicitis, puerperal infection, tuberculosis and gonorrhea. His records showed 33 gonorrheal cases, 25 puerperal, 25 tuberculous, three appendicular and one traumatic. Women often carried gonorrheal abscesses for years without any special discomfort or risk, and he thought he had seen a few actually recover. It was possible for very small pus collections to undergo absorption, and sometimes pus sacs discharged into the uterus, leading to recovery. Sufficient attention had not been paid to the relation which gonorrhea bears to puerperal sepsis. The diagnosis was made from the history, the symptoms and the physical signs. Traumatism, gonorrhea and a recent childbirth were suggestive in connection with the possibility of the existence of pelvic suppuration. In all of the cases there was a sense of lassitude, and this might be associated with slight chills or with more or less pain. The presence of a hard, board-like exudate might justify delaying operation. It was often necessary to keep the patient under observation for some time; it was sometimes absolutely impossible to differentiate between a suppurating tube and a connective tissue abscess. The absorption or pus collections or the discharge of a pyosalpinx into the uterus occurred so exceptionally that one was not justified in giving it serious consideration in connection with the treatment. While the only proper treatment for pelvic suppuration was surgical, good medical judgment was often requisite for the treatment in the early stages, and in deciding upon delay in order to allow the pus collection to become more distinctly localized.

The author presented a tabulated record of the 92 cases upon which he had operated for pelvic suppuration. Of these, 41 were operated upon from above, with 39 recoveries and two deaths; 45 were operated upon per vaginam with 42 recoveries and three deaths, and six cases were operated upon both from above and below, with five recoveries and one death. He was convinced that the surgeon should not be wedded to either the abdominal or the vaginal route. In the majority of cases of laparotomy for pelvic suppuration there was a rise of temperature of half a degree to two degrees within 48 hours as a result of intestinal toxemia. To avoid this he was now in the habit of opening the bowels with fractional doses of calomel, beginning immediately after recovery from the anesthetic. He did not think it was good surgery to remove a healthy uterus because the appendages happened to be diseased. The following rules were laid down: (1) To prevent suppuration, examinations in patients suffering from any variety of pelvic inflammation should be made gently and infrequently; (2) the use of sounds and cervical dilators under ordinary circumstances should be restricted to the operating room where proper preparation and proper precautions can be taken; (3) after a gonorrheal pus tube has been removed, the woman must be warned of the liability to infection of the other side if she subjects herself to the chance of another infection by the diseased male, and (4) abscesses pointing above or below should be treated by simple incision and drainage.

Dr. Frederick Holme Wiggin spoke of the importance of pain in connection with the diagnosis. If a pelvic tumor were not painful the presence of pus could generally be safely excluded. Pelvic suppuration, he thought, was very frequently due to the practice of curetting the uterus in office practice without proper precautions. There were more cases of pelvic suppuration in women due to tuberculosis than was generally thought to be the case. This was especially true of young women. He had never seen a unilateral pyosalpinx. It was by no means an infrequent occurrence for these abscesses to discharge through the uterus. Quite large pus collections were frequently felt on one day and would be gone by the next day, evacuation having taken place through the uterus. Formerly he had drained pelvic abscesses through the vagina, but more recently he had found it better to do a laparotomy and not only remove the pus collection but also the cause. He favored removal of the body of the uterus because if this were not done the patient was apt to return subsequently with disease of this organ. The removal of the uterus did not increase the risk. The organ should be removed down to the cervix. In recent years it had been his custom to abandon drainage altogether provided it was possible to remove the cause of the suppuration. In some cases in which the pelvis was necrotic he had walled off the intestines and applied first pure carbolic acid, and then alcohol on a swab, and had finally flushed out with saline solution and closed the abdominal cavity while filled with this solution.

Dr. William J. Chandler said he wished to emphasize the necessity of making each one of these cases a study by itself. In the old days many of these abscesses pointed spontaneously, and discharged through the vagina or rectum, and while the process of repair was slow, these patients usually recovered eventually. He did not wish to advocate the witholding of better surgical treatment, yet he would insist upon the comparative safety in many cases of waiting and watching. In a recent case of criminal abortion and septic peritonitis, the woman was almost in collapse when admitted to the hospital. There were two large abscesses found on laparotomy, and they were quickly drained. The patient's condition was so bad that further operation seemed inadvisable. She recovered and left the hospital, but subsequently required another incision of the abscesses. A third time the abscess cavities called for opening, and then there was such a hemorrhage that he learned the operating surgeon had been forced to open the abdomen. Despite this she succumbed.

Dr. R. T. Morris said regarding the gonorrheal infection appearing to be the mildest, that he thought this was dependent largely upon the terminal conditions. The factor of cell resistance was often of great importance, although it was one not often discussed. Clark's paper on the cleansing of the abdomen without drainage was an epoch-making contribution to the literature, although it had attracted very little attention when first published. The present tendency seemed to be toward closing the abdomen with little or no drainage. He had made a series of cultures, and had found that even when there was active bacterial invasion, if the chief pus collection were removed there was no further infection. If a pus collection formed again it apparently pointed almost invariably in the old line of operation.

Dr. Brothers said that when the process was acute, there was always pain present, and it was due not to the mere presence of a pus collection but to the escape of the pus and the consequent setting up of a peritonitis. From an operative point of view, the tube distended with pus is removed, and not the one which might have been originally infected and had undergone cure. If it were assumed that these pus collections were bilateral, then both the appendages and the uterus should be removed. This did not seem to him to be the trend of modern gynecological surgery, particularly in this country—indeed, there was a disposition at the present time not to remove pus tubes, but rather to open them and wash them out.

Dr. Wiggin explained that although he favored the removal of the uterus he always left the ovaries, even when forming the wall of the abscess. Of course, if they were themselves diseased they would have to be sacrificed.

Empyema of the Accessory Sinuses of the Nose.—Dr. J. H. Woodward was the author of this paper. He called attention to the fact, that the cells of the ethmoid must be regarded clinically as an essential part of the sinus system of the upper respiratory tract. These cells were in two groups, an anterior and a posterior. As a rule, in health there was no communication between those two groups. The ethmoid cells often extended into the orbital roof, and frequently as far backward as the apex of the orbit. The frontal sinuses became distinct air cells from the sixth to the eighth year, and attained their full development about the thirtieth year. Turner had examined 355 skulls, and found the septum in the mesial plane in 277, and its lower end in this plane in all but 13. These sinuses were often subdivided into several compartments. In operating through the anterior wall of the sinus the direction should be directly backward for 8 mm., and if not pierced, the direction should be made downward. The maxillary sinus usually discharges through a single ostium in the upper portion of the inner wall. The sphenoidal sinus opens into the superior meatus by an aperture not properly located for drainage. The majority of the inflammations of the accessory sinuses were secondary to intra-nasal inflammation. Pyogenic inflammation of the maxillary sinus, however, was most commonly due to dental caries. Perhaps the most universal subjective symptom of inflammation of the accessory sinuses was pain, the intensity of which varied greatly. There might be at times such a marked periodicity to this as to suggest the diagnosis of malaria. In maxillary sinusitis the pain was chiefly frontal, whereas in frontal sinusitis the seat of the pain was much lower down than one would expect. The sinusitis was also associated with the signs of a rhinitis, and there would be a discharge of pus from the nose. Pus from the frontal sinus and anterior ethmoidal cells appeared high up, flowing forward and downward and backward toward the middle meatus. Pus from the sphenoidal cells could be seen by the rhinoscopic mirror flowing backward toward the throat. Transillumination was an important though not infallible aid to diagnosis, and should never be omitted. The natural course of an acute sinusitis was toward recovery. When the sinuses were obstructed by inflammatory swelling or by abnormalities there was not this tendency. In acute cases the treatment should be directed toward securing patency of the orifices of the sinuses. Mild alkaline sprays containing cocaine were useful as were also the use of steam impregnated with menthol. Curettage and irrigation with a saturated solution of boric acid were beneficial in the chronic cases. In very bad cases pure carbolic acid might be applied, and need not be followed by the use of alcohol. It was not advisable to irrigate the antrum for more than two or three weeks after the operation. Should pus formation persist after one month, a large opening may be made for drainage through the inferior meatus of the nose. Obstructions in the nose should be removed as a preparatory treatment in cases of chronic suppuration of the accessory sinuses. In the case of the frontal sinus the best method was by external operation, and the resulting deformity need not be very great. Suppuration of the ethmoidal cells was preferably attacked by the intra-nasal route, using the cutting forceps and curette carefully. The floor of the cells should be cut away as far as possible, and the remainder curetted. The sphenoidal sinus should be approached by the intra-nasal route after the removal of the middle turbinate bone. The results of treatment of empyema of the accessory sinuses were satisfactory, but complete eradication of pyogenic infection was one of the most difficult tasks in surgery.

Dr. H. H. Seabrook said that he had seen for the most part the class of cases causing necrosis of the orbit. In his experience it had not been necessary to also drain through the nose, and the free communication of the veins of the face made one liable to carry infection into the cerebrum if this were done during inflammation. The operation could be done along the inner wall and only a linear scar be left. In disease of the frontal sinus and upper ethmoidal cells, the orbital operation seemed to him worthy of mention. A flap operation was done, and good access to the part thus secured. Good drainage could be obtained through a small opening in the upper lid. Very little scarring was left, and the suppurative process was usually controlled in a few weeks.

BOOKS RECEIVED.

The Medical News *acknowledges the receipt of the following new publications. Reviews of those possessing special interest for the readers of the* Medical News *will shortly appear.*

Transactions of the Association of American Physicians. Seventeenth Session. 8vo, 667 pages. Philadelphia.

Obstetrical Nursing for Nurses and Students. By Dr. H. E. Tuley. 12mo, 198 pages. Illustrated. G. P. Engelhard & Company, Chicago.

Lessons and Laroratory Exercises in Bacteriology. By Dr. Allen J. Smith. 8vo, 298 pages. Illustrated. P. Blakiston's Son & Co., Philadelphia.

The Earth in Relation to the Preservation and Destruction of Contagia. By Dr. G. V. Poore. 8vo, 256 pages. Illustrated. Longmans, Green & Co., New York.

A Reference Handbook of the Medical Sciences. New Edition by Dr. Albert H. Buck. Vol. V. Quarto, 873 pages. Illustrated. William Wood & Company, New York.

A Manual of Dissection and Practical Anatomy. Founded on Gray and Gerrish. By Drs. William T. Eckley and C. B. Eckley. 8vo, 408 pages. Illustrated. Lea Brothers & Co., Philadelphia and New York.

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SPECIAL ARTICLES.

ON THE NEED OF A RADICAL REFORM IN OUR METHODS OF TEACHING SENIOR STUDENTS.

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Motto.—[1] "The Hospital is the only proper college in which to rear a true disciple of Æsculapius."
—Abernethy.

My text is taken from the report of the Examining Board to the Surgeon-General of the Army, which received wide publicity last spring. *Of 87 candidates, graduates from medical schools, only 18 were accepted.* On further analysis of these figures it is found that 21 were physically disqualified and 48 withdrew or were rejected. Taking the figures for the years 1901 and 1902, kindly furnished by Surgeon-General O'Reilly, of 333 candidates, 101 were physically disqualified, 165 withdrew or were rejected (96 rejected), and only 67 were accepted. The percentage of rejections during the two examinations of this year is somewhat higher than that of the two previous examinations.

From the standpoint of practical medicine and surgery, the examiners for the Army and Navy constitute the only independent boards of judges of the quality of our work as teachers. The examination is largely practical, and I am told that the failure is chiefly in this part of the test. The figures justify, I think, the somewhat sweeping title which I have chosen for my paper. The examinations of the State Boards are still theoretical and the results cannot be taken as a safe indication of the character of our work.

I.

The last quarter of the last century saw many remarkable changes and reformations, among which in far-reaching general importance not one is to be compared with the reform, or rather revolution, in the teaching of the science and art of medicine. Whether the conscience of the professors at last awoke, felt the pricking of remorse, or whether the change, as is most likely, was only part of that larger movement toward larger events in the midst of which we are to-day, need not be here discussed. The improvement has been in three directions: in demanding of the student a better general education; in lengthening the period of professional study; and in the substitution of laboratories for lecture rooms, in the replacement of theoretical by practical teaching. The problem before us as teachers may be very briefly stated: to give to our students an education of such a character that they can become sensible practitioners—the destiny of seven-eighths of them. Toward this end are all our endowments, our multiplying laboratories, our complicated curricula, our palatial buildings. In the four years' course a division is very properly made between the preparatory or scientific branches and the practical; the one taught in the school or college, the other in the hospital. Not that there is any essential difference; there may be as much science taught in a course of surgery as in a course of embryology. The special growth of the medical school in the past 25 years has been in the direction of the practical teaching of science. Everywhere the lectures have been supplemented or replaced by prolonged practical courses, and instead of a single laboratory devoted to anatomy, there are now laboratories of physiology, of physiological chemistry, of pathology, of pharmacology, and of hygiene. Apart from the more attractive mode of presentation and the more useful character of the knowledge obtained in this way, the student learns to use the instruments of precision, gets a mental training of incalculable value, and perhaps catches some measure of the scientific spirit. The main point is that he has no longer a lecture-room, theoretical knowledge, but a first hand practical acquaintance with the things themselves. He not only has dissected the sympathetic system, but he has set up a kymograph and can take a blood pressure observation, he has personally studied the action of digitalis, of chloroform and of ether, he has made his own culture media and he has "plated" organisms. The young fellow who is sent on to us in his third year is nowadays a fairly well-trained man and in a position to begin his life's work in those larger laboratories, private and public, which nature fills with her mistakes and experiments.

How can we make the work of the student in the third and fourth year as practical as it is in his first and second? I assume that it is not; my text allows it. I take it for granted we all feel that it should be. The answer is, take him from the lecture-room, take him from the amphitheatre,—put him in the out-patient department—put him in the wards. It is not the systematic lecture, not the amphitheatre clinic, not even the ward class—all of which have their value—in which the reformation is needed, but in the whole relationship of the senior student to the hospital. In the laboratories during the first two years, he is thoroughly at home, domiciled with his place in each one at which he can go and work quietly under a tutor's direction and guidance. To parallel this condition in the third and fourth years certain reforms are necessary. First, in the conception of how the art of medicine and surgery can be taught. My firm conviction is that we should start the senior student at once on his road of life. Ask any physician of 20 years' standing how he has become proficient in his art, and he will reply, by constant contact with disease; and he will add that the medicine he learned in the school was totally different from the medicine he learned at the bedside. The graduate of a quarter of a century ago went out with little practical knowledge, which increased only as his practice increased. In what may be called the natural method of teaching the student begins with the patient, continues with the patient, and ends his studies with the patient, using books and lectures as tools, as means to an end. The student starts, in fact, as a practitioner, as an observer of disordered machines, with the structure and orderly functions of which he is perfectly familiar. Teach him how to observe, give him plenty of facts to observe and the lessons will come out of the facts themselves. For the junior student in medicine and surgery it is a safe rule to have no teaching without a patient for a text, and the best teaching is that taught by the patient himself. The whole art of medicine is in observation, as the old motto goes, but to educate the eye to see, the ear to hear and the finger to feel takes time, and to make a beginning, to start a man on the right path, is all that we can do. We expect too much of the student and we try to teach him too much. Give him good methods and a proper point of view, and all other things will be added, as his experience grows.

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[1] This quotation is from an interesting lecture by John W. Francis (an old pupil of Abernethy), at Bellevue Hospital, 1858.

The second, and what is the most important reform, is in the hospital itself. In the interests of the medical student, of the profession and of the public at large we must ask from the hospital authorities much greater facilities than are at present enjoyed, at least by the students of a majority of the medical schools. The work of the third and fourth year should be taken out of the medical school entirely and transferred to the hospital, which, as Abernethy remarks in the motto (at the head of this article), which I have chosen is the proper college for the medical student, in his last years at least. An extraordinary difficulty here presents itself. While there are institutions in which the students have all the privileges to be desired, there are others in which they are admitted by side entrances to the amphitheatre of the hospital, while from too many the students are barred as hurtful to the best interests of the patients. The work of an institution in which there is no teaching is rarely first class. There is not that keen interest, nor the thorough study of the cases, nor amid the exigencies of the busy life is the hospital physician able to escape clinical slovenliness unless he teaches and in turn is taught by assistants and students. It is, I think, safe to say that in a hospital with students in the wards the patients are more carefully looked after, their diseases are more fully studied and fewer mistakes made. The larger question, of the extended usefulness of the hospital in promoting the diffusion of medical and surgical knowledge, I cannot here consider.

¶The objection often raised that patients do not like to have students in the wards is entirely fanciful. In my experience it is just the reverse. On this point I can claim to speak with some authority, having served as a hospital physician for more than 25 years, and having taught chiefly in the wards. With the exercise of ordinary discretion and if one is actuated by kindly feelings toward the patients, there is rarely any difficulty. In the present state of medicine it is very difficult to carry on the work of a first-class hospital without the help of students. We ask far too much of the resident physicians, whose number has not increased in proportion to the enormous increase in the amount of work thrust upon them, and much of the routine work can be perfectly well done by senior students.

II.

How, practically, can this be carried into effect? Let us take the third year students first. A class of 100 students may be divided into 10 sections, each of which may be called a clinical unit, which should be in charge of one instructor. Let us follow the course of such a unit through the day. On Mondays, Wednesdays and Fridays at 9 A.M. elementary instruction in physical diagnosis. From 10 to 12 A.M. practical instruction in the out-patient department. This may consist in part in seeing the cases in a routine way in receiving instruction how to take histories, and in becoming familiar with the ordinary aspect of disease as seen in a medical out-clinic. At 12 o'clock a senior teacher could meet four, or even five, of the units, dealing more systematically with special cases. The entire morning, or, where it is customary to have the hospital practice in the afternoon, a large part of the afternoon, two or three hours at least, should be spent in the out-patient department. No short six weeks' course, but each clinical unit throughout the session should as a routine see out-patient practice under skilled direction. Very soon these students are able to take histories, have learned how to examine the cases, and the out-patient records gradually become of some value. Of course all of this means abundance of clinical material, proper space in the out-patient department for teaching, sufficient apparatus and young men who are able and willing to undertake the work.

On the alternate days, Tuesdays, Thursdays and Saturdays, the clinical unit (which we are following) is in the surgical out-patient department, seeing minor surgery, learning how to bandage, to give ether and helping in all the interesting work of a surgical dispensary. Groups of three or four units should be in charge of a demonstrator of morbid anatomy, who would take them to postmortems, the individual men doing the work, and one day in the week all the units could attend the morbid anatomy demonstration of the professor of pathology. I take it for granted that the student has got so far that he has finished his pathological histology in his second year, which is the case in the more advanced schools.

Other hours of the day for the third year could be devoted to the teaching of obstetrics, materia medica, therapeutics, hygiene and clinical microscopy. At the end of the session in a well conducted school the third-year student is really a very well-informed fellow. He knows the difference between Pott's disease and Pott's fracture; he can readily feel an enlarged spleen, and he knows the difference between Charcot's crystals and Charcot's joint.*

In the fourth year I would still maintain the clinical unit of 10 men, whose work would be transferred from the out-patient department to the wards. Each man should be allowed to serve for at least half of the session in the medical wards and half in the surgical wards. He should be assigned four or five beds. He has had experience enough in his third year to enable him to take the history of the new cases, which would need, of course, supervision or correction by the senior house officer or attending physician. Under the supervision of the house physician he does all of the work connected with his own patients; analysis of the urine, etc., and takes the daily record as dictated by the attending physician. One or two of the clinical units are taken round the wards three or four times in the week by one of the teachers for a couple of hours, the cases commented upon, the students asked questions and the groups made familiar with the progress of the cases. In this way the student gets a familiarity with disease, a practical knowledge of clinical methods and a practical knowledge of how to treat disease. With equal advantage the same plan can be followed in the surgical wards and in the obstetrical and gynecological departments.

An old method, it is the only method by which medicine and surgery can be taught properly, as it is the identical manner in which the physician is himself taught when he gets into practice. The radical reform needed is in the introduction of the system of clinical clerks and surgical dressers, who should be just as much a part of the machinery of the wards as the nurses or the house physicians.

There is no scarcity of material; contrariwise. Think of the plethora of patients in this city, the large majority of whom are never seen, not to say touched, by a medical student! Think of the hundreds of typhoid fever patients, the daily course of whose disease is never watched or studied by our pupils! of the hundreds of cases of pneumonia which will enter the hospitals during the next three months, how few will be seen daily, hourly, in the wards by the fourth year men! And yet this is what they are in the medical school for, just as much as, more indeed, than they are in it to learn the physiology of the liver or the anatomy of the hip-joint.

But, you may ask, how does such a plan work in practice? From a long experience I can answer admirably! It has been adopted in the Johns Hopkins Medical School, of which the hospital, by the terms of the founder's will, is an essential part. There is nothing special in our material, our wards are not any better than those in other first-class hospitals but a distinctive feature is that greater provision is made for teaching of students and perhaps for the study of disease. Let me tell you in a few words just how the work is conducted. The third year students are taught medicine:

First, in a systematic course of physical diagnosis conducted by Drs. Thayer and Futcher, the Associate Professors of Medicine, in the rooms adjacent to the out-patient department. In the second half of the year, after receiving instruction in history-taking, the students take notes and examine out-patients.

Secondly, three days in the week at the conclusion of the out-patient hours, the entire class meets the teacher in an adjacent room, and the students are taught how to examine and study patients. It is remarkable how many interesting cases can be shown in the course of a year in this way. Each student who takes a case is expected to report upon and "keep track" of it, and is questioned with reference to its progress. The opportunity is taken to teach the student how to look up questions in the literature by setting subjects upon which to report in connection with the cases they have seen. A class of 50 can be dealt with very conveniently in this manner.

Thirdly, the clinical microscopy class. The clinical laboratory is part of the hospital equipment. It is in charge of a senior assistant, who is one of the resident officers of the hospital. There is room in it for about one hundred students on two floors, each man having his own work-table and locker and a place in which he can have his own specimens and work at odd hours. The course is a systematic one, given throughout the session, from two hours to two hours and a half twice a week, and consists of routine instruction in the methods of examining the blood and secretions, the gastric contents, urine, etc. This can be made a most invaluable course, enabling the student to continue the microscopic work which he has had in his first and second years, and he familiarizes himself with the use of a valuable instrument, which becomes in this way a clinical tool and not a mere toy. The clinical laboratory in the medical school should be connected with the hospital, of which it is an essential part. Nowadays the microscopical, bacteriological and chemical work of the wards demands skilled labor, and the house physicians, as well as the students need the help and supervision of experts in clinical chemistry and bacteriology, who should form part of the resident staff of the institution.

Fourthly, the general medical clinic. One day in the week, in the amphitheater, a clinic is held for the third and fourth year students and the more interesting cases in the wards are brought before them. As far as possible we present the diseases of the seasons, and in the autumn special attention is given to malarial and typhoid fever, and later in the winter to pneumonia. Committees are appointed to report on every case of pneumonia and the complications of typhoid fever. There are no systematic lectures, but in the physical diagnosis classes there are set recitations, and in what I call the observation class in the dispensary held three times a week, general statements are often made concerning the diseases under consideration.

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* The question of the methods of teaching of Physical Diagnosis has been dealt with recently by my associate, Professor W. S. Thayer.—Boston Medical and Surgical Journal, 1902, II.

Fourth Year Ward Work.—The class is divided into three groups (one in medicine one in surgery and one in obstetrics and gynecology) which serve as clinical clerks and surgical dressers. In medicine each student has five beds. He takes the notes of the new cases as they come in, does the urine and blood work and helps the house physician in the general care of the patients. From nine to eleven the visit is made with the clinical clerks, and systematic instruction is given. The interesting cases are seen and new cases are studied and the students questioned with reference to the symptoms and nature of the disease and the course of treatment. What I wish to emphasize is that this method of teaching is not a ward-class in which a group of students is taken into the ward and a case or two demonstrated; it is *ward-work,* the students themselves taking their share in the work of the hospital, just as much as the attending physician, the interne or the nurse. Moreover, it is not an occasional thing. His work in medicine for the three months is his major subject, and the clinical clerks have from nine to twelve for their ward-work, and an hour in the afternoon in which some special questions are dealt with by the senior assistant or by the house physicians.

The Recitation Class.—As there are no regular lectures, to be certain that all of the subjects in medicine are brought before the students in a systematic manner, a recitation class is held once a week upon subjects set beforehand.

The Weekly Clinic in the amphitheatre, in which the clinical clerks take leading parts, as they report upon their cases and read the notes of their cases brought before the class for consideration. Certain important aspects of medicine are constantly kept before this class. Week after week the condition of the typhoid fever cases is discussed, the more interesting cases shown, the complications systematically placed upon the board. A pneumonia committee deals with all the clinical features of this common disease, and a list of the cases is kept on the blackboard, and during a session the students have reports upon 50 or 60 cases, a large majority of which are seen in the clinic by all of them, while the clinical clerks have in the wards an opportunity of studying them daily.

The general impression among the students and the junior teachers is that the system has worked well. There are faults, perhaps more than we see, but I am sure they are not in the system. Many of the students are doubtless not well informed theoretically on some subjects, as personally I have always been opposed to that base and most pernicious system of educating them with a view to examinations, but even the dullest learn how to examine patients, and get familiar with the changing aspects of the important acute diseases. The pupil handles a sufficient number of cases to get a certain measure of technical skill, and there is ever kept before him the idea that he is not in the hospital to learn everything that is known but to learn how to study disease and how to treat it, or rather, as I prefer to teach, how to treat patients.

III.

A third change is in a reorganization of the medical school. This has been accomplished in the first two years by an extraordinary increase in the laboratory work, which has necessitated an increase in the teaching force, and indeed an entirely new conception of how such subjects as physiology, pharmacology and pathology should be taught. A corresponding reformation is needed in the third and fourth years. Control of ample clinical facilities is as essential to-day, as large, well-endowed laboratories, and the absence of this causes the clinical to lag behind the scientific education. Speaking for the Department of Medicine, I should say that three or four well-equipped medical clinics of 50 to 75 beds each, with out-patient departments under the control of the directors, are required for a school of maximum size, say 800 students. Within the next quarter of a century the larger universities of this country will have their own hospitals in which the problems of nature known as disease will be studied as thoroughly as are those of Geology or Sanscrit. But even with present conditions much may be done. There are hundreds of earnest students, thousands of patients and scores of well-equipped young men willing and anxious to do practical teaching. Too, often, as you know full well, "the hungry sheep look up and are not fed," and for the bread of the wards given the stones of the lecture-room and amphitheatre. The dissociation of student and patient is a legacy of the pernicious system of theoretical teaching from which we have escaped in the first and second years.

While the title of this paper may seem very strong and indicate too sweeping a conclusion from comparatively small premises, yet the results of the examination of the Army Board are not the only warrant for the statement, as it is notorious that *ward-work*, in the sense in which I have spoken, is not adopted generally in our systems of teaching. The old method and the true method —the method of Boerhaave. of the elder Rutherford of the Edinburgh School, and of the older men of this city and of Boston and of Philadelphia, the men who had been pupils of John Hunter and of Rutherford and of Saunders—is to make of the hospital a college, in which as clinical clerks and surgical dressers the students slowly learn for themselves, under skilled direction, the phenomena of disease. It is the true method because it is the natural one, the one by which each physician grows in clinical wisdom after he leaves the school—all others are bastard substitutes.

THE INSTRUCTION OF SENIOR STUDENTS IN MEDICINE.

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A RECENT discussion at the New York Academy of Medicine, in which the writer took part, was based upon the subject "The Need of a Radical Reform in the Teaching of Medicine to Senior Students." The questions involved are complex and of fundamental importance to the medical profession and public and a further consideration of them seems desirable. At the meeting above referred to the thesis was maintained by the leading speaker that in the fourth year of the medical curriculum, and, possibly in the third year also, the teaching of medicine should be conducted exclusively at the bedside and in the dispensary, and that didactic lectures should be abandoned. In relinquishing a method of teaching by which the great majority of medical men in this country have been so successfully trained in the past, it is necessary that whatever system is substituted for it should be equally as comprehensive and thorough. It is the opinion of the writer, who has given several years' trial to the system under discussion, that the bedside clinic should not be made *wholly* to replace the clinical and didactic lecture, and further that the true basis of systematic instruction should consist of recitations from standard text-books, illustrated, in so far as possible, by bedside and dispensary cases, supplemented by certain clinical and didactic lectures. The practical difficulties which the writer has recognized in bedside teaching may be summarized as follows:

1. It is manifestly impossible, even with the service of several metropolitan hospitals at command, to thus demonstrate every variety of disease. Many diseases are either not indigenous to this country, or to certain localities. Other diseases vary too much in prevalence with seasonal and other conditions; for example in New York City one cannot demonstrate insolation at the bedside in August when the college is closed for the summer recess; cerebro-spinal meningitis may not happen to prevail at all, typhoid fever varies greatly in intensity in different years, beri-beri or filariasis may be imported about once in a half dozen years, typhus fever is practically extinct, and so is variola, at the time of writing. What are the actual figures based upon experience in such an hospital as the Bellevue having 850 beds? In a standard text-book of medicine under that most important group of all diseases, the infections, 42 are classed in the table of contents. Of these 42 infections only 13, or less than one-third, can be shown regularly every year in the wards or dispensary; 17, or nearly one-half, cannot be shown because they do not exist in New York; six may possibly be observed once in two or three years; and six more may be shown at another hospital (one for contagious disease only), by exposing several hundred students to the hazard of infection.

2. It is impossible to demonstrate all the symptoms or complications characteristic of any given disease, such as meningitis or tuberculosis, in a single patient, or very often, indeed, in a group of patients. For example, one may treat 50 cases of typhoid fever without meeting with a single case of perforation, or if such a case does occur, it is manifestly impossible to allow even a small bedside section of students to personally examine the patient's abdomen. Sooner or later one must present many phenomena of disease to the student's mind which he can neither directly see, or touch, or hear, and they must be presented in a manner best suited to enable him to retain their recollection and identify them when he does meet with them. Between trying to demonstrate these phenomena upon a patient who does not exhibit them, and the other method of enforcing the lesson from a text-book recitation or a concise didactic lecture, the choice is distinctly in favor of the latter. A youth reared in Nebraska may have a poorer conception of a mountain than if he had rambled over Pike's Peak, yet he may be, and should be so taught as to enable him when he first sees a mountain to recognize it for himself and without necessarily stumbling over the foothills. The doctrine of teaching the student "no disease without a patient to illustrate it" is a *reductio ad absurdum.*

3. There is some danger of bedside teaching becoming too pictorial and hence superficial. The student is presented with a picture-book without adequate text. Moreover, such clinical pictures as he really needs at first should be well-defined composites, not a collection of exceptions to the average (as so many clinical cases are, in actual practice). In other words, he should have certain composite standards of comparison clearly established for him, and not be trusted always to form them himself. In illustration, one of my colleagues tells me of the following experience: A student came before him for examination as an hospital interne, who had received his training at a university school, where bedside teaching has completely superseded other methods. He was asked to describe a typical case of carcinoma of the stomach? Answer: "I have only seen two cases, in Professor X's clinic, one had this symptom, the other that." "But what other symptoms may there be present?" "I did not know there were any."

4. A clinical case may teach too little, or it may teach too much. Granted that the student remembers the case he has seen much better than a composite case of which he has read or heard of in a lecture, he may at a later period overlook the search for most important symp-

toms, because his patient did not present them; or, on the other hand, a case having combined cardiac, pulmonary, renal, hepatic and digestive symptoms, may yield no very distinct impression owing to the very multiplicity of symptoms. Such cases as the latter are frequently observed without doubt, but if shown to the student too early in his course they may be much less clearly defined than by classical text-book descriptions of the several diseases which have united in producing so complex a clinical picture.

5. It is utterly impossible to be more than superficially systematic with exclusive bedside (or dispensary) teaching, even in so large a hospital as that above mentioned. To illustrate: One desires to present a systematic series of cases of diseases of the liver; the cirrhoses are always with us, and so are types of jaundice, but who can produce at command an hepatic abscess, or even syphilis of the liver or a primary carcinoma, and what has become of acute yellow atrophy? Some of these diseases may appear later in the term, but then one is occupied perhaps with cardiac cases, and to present the hepatic cases at that time is to add further confusion to any systematic order. Or, possibly a case of acromegaly is seen at the other end of the ward—shall one forsake the ninety and nine cirrhoses to pursue the one acromegaly? There may not be such another case for three years, and which is better for the student? Besides it is so easy to return to cirrhosis; yet one would not wish the student to regard hypertrophy of the maxillæ and other bones as a symptom of cirrhosis, as he is liable to do in sheer confusion of mind, if shown too many and various cases.

6. It has been claimed that the method of exclusive bedside instruction is the *only* natural method "as employed by Hippocrates," and that the essential difference between student and practitioner is merely a difference in length of time of study, and consequently of experience. But does the practitioner learn solely from what he himself sees at the bedside? Does he not also learn from a well-presented paper, read at a medical meeting (which is the lecture) and the well-conducted discussion (which is practically the recitation), even though no patient be present? In fact, it not rarely happens at a medical society meeting that a patient is presented whom no one troubles to examine, merely because the description of the case as read or recited has been so much more graphic than anything the patient could show.

7. "Bedside teaching" (and with it I would be understood throughout this article as including dispensary teaching by means of ambulatory cases) is most seductive from the teacher's standpoint. Those of us who have tried older methods as well, realize how much more interesting it is for ourselves to spend an hour at the bedside than to stand up and "lecture" for a similar time. There is more opportunity for finding something new and instructive for oneself, and hence it is easier to put enthusiasm into the work. Bedside teaching never acquires the monotony for the teacher that lectures too often do when repeated for 30 years. Yet who among us of the older medical generation does not recall more than one lecturer whose instruction has made upon him a powerful and lasting impression in the description of disease? To repeat a remark quoted by one of the speakers at the Academy meeting above referred to, "One who does not believe in didactic lectures, certainly never ought to deliver them." Bedside teaching becomes a very different problem in a given institution according to whether there are 40 students to study 200 patients or 200 students to study 40 patients. Not more than 10 students can be profitably taught together in a single bedside section, if each student is to be given opportunity to make those thorough physical examinations for himself which are the chief value of this method. With a larger number of students there are always some who cannot see or hear all they should and whose attention is difficult to hold. Only two can feel the pulse simultaneously, only one can examine the heart, only three or four can study closely the typhoid roseola simultaneously, etc. Meanwhile the others must wait, and, if the clinician does not hold their attention by talking (which interrupts those actually employed), their eyes and minds wander to other things, and the student may say to himself, "Oh, I've seen a case of typhoid fever. I wonder what that is over there in the other corner of the ward." That is very certain to happen if the bedside section numbers 30 or 40 students. On the other hand, with bedside classes of 10 students and a total fourth year class of 200 students, there will be 20 bedside sections to be taught, which involves much repetition of work for the teacher, and what shall one say of the unlucky patient, who day after day must "sit up and take long breaths, please, or count one, two, three" to demonstrate a patch of consolidation of the lung, or who is required to have 200 successive hands grope for the elusive spleen? Of course such things become at once impracticable and the result is the manifest impossibility of showing all the students the same cases, or even groups of cases, and hence of having any real system or uniformity in this method of instruction. One student may derive much more experience from it than another. It is well that these problems should be understood, for "bedside teaching" has become the war-cry of competing institutions throughout the country, and it may, according to circumstances, mean very much or very little to the individual student. The admirable variety of bedside instruction which consists in assigning individual students to the study of particular cases for a period of several weeks, requiring them to make an exhaustive research of each case and report the same in writing is extremely difficult to maintain when a class numbers over 100 students, and the college does not absolutely control the hospital. Students, if allowed too free access to the wards are apt to be indiscreet; they may interrupt the patient's meals, interfere with the nurses' work,

or drive away visitors. Complaints reach the managerial board (which is none too partial to medical education at any time) and privileges for students of access to wards, grudgingly granted originally, are still further curtailed.

I have dwelt thus fully upon the practical details and some of the difficulties involved in bedside teaching, because they are not generally appreciated. Some of them can be overcome by tact and effort, but others are more serious. On the other hand, certain important topics are in no sense subjects for bedside teaching, and these still find their legitimate field for discussion in the didactic lecture. Such, for example, are the important questions of heredity, of immunity, of diatheses in general, etc. Thirty or 40 didactic lectures may be advantageously given upon such topics, together with those of general or comparative symptomatology. Beyond this it is unnecessary to extend the didactic lecture system. The amphitheatre clinic still has a useful function in enabling the teacher to demonstrate general methods of examination of cases, and of differential diagnosis, as well as to stand in the light of a consultant to the more advanced student who has previously carefully prepared the history and record of the case. Many suitable cases may be as well demonstrated to an audience of 200 in the amphitheatre as to 10 at the bedside, and features of etiology, differential diagnosis and treatment can be often better dealt with in this manner, for the larger audience is itself a stimulus to both instructor and students to set forth their best efforts. The real hard work of the student should, however, be expended upon text-book recitations for which he should be held strictly accountable, for in this manner only can he be impressed with an orderly, thorough and complete presentation of the subject of medicine. The recitation system is a true pedagogic method; it is found to be so in the primary school, in the high-school, in the academic college. Through all his early years the student is taught to read, remember and recite. Why abandon this method in the professional school? By no other means can the instructor test so well the daily increment of knowledge of his class, promptly supply deficiencies and correct misapprehensions. By no other means can the student so well test himself, and compare his progress with that of his associates. Bedside teaching and class dispensary teaching he should certainly receive an abundance, but he should not delude himself, as he is so apt to do, by thinking it is a shortcut to knowledge. Let him be taught to *read* and to *study*, not merely to accumulate clinical pictures, or because he has seen a case or two of typhoid fever with his own eyes believe that he knows all about the disease. That is where the danger lies, in the evercrowded curriculum of the four years course. The medical student of 1902 finds himself ground between the upper and the nether millstone. The latter is the laboratory which in increasing number and variety is constantly tending to consume more and more of the student's energy and time. The former is the specialist who in the enthusiasm of rapidly accumulating data and the elaboration of technic is liable to distort somewhat the symmetrical balance of the curriculum and demand each year for his particular department more and more hours of the already overworked student. Similarly even bedside instruction in medicine may fail of its legitimate object if not very carefully considered. It should be employed to illustrate, in so far as possible, what has been already learned in the text-book and to teach methods of examination and close observation rather than merely to present variety.

The bedside or dispensary teaching should be subdivided so that each student in successive sections should broaden his experience along definite lines. In one section he should be taught the physical diagnosis of the lungs and heart, in another the physical diagnosis of the abdominal organs, or of the pulse, of various cachexias, etc.; in still another he should be made to review in all possible detail a single important case, rather than the comparison of one condition in a number of cases (as in the previous section). Another section should be held for "conference" at which he reads a report of a case which he has studied for several days or weeks consecutively, as if it were his own, the report to be discussed by his associates and instructor. It is increasingly difficult to cover all this ground satisfactorily in the two final years of a four years course, encroached upon as they are by the laboratory and the various "specialties," but a fifth year is not under discussion in this article. Let us avoid the dangers of attempting to teach too much; of training men as specialists before they have mastered the broad foundations of general medicine; of teaching too many data rather than cultivating method, system and the power of observation; of failing to allow the student sufficient time to assimilate what he has ingested, to read, to think, and to *study*—in a word, do not let us plant the seeds of knowledge so closely that they suffocate each other and fail to sprout.

In conclusion I would repeat that in pointing out the difficulties attending the bedside method I have no intention of disparaging it, on the contrary, it is to be cultivated to the fullest extent. Carefully regulated and classified, it should be employed to elucidate rather than supersede a broad foundation laid by reading and recitation, and supplemented by a limited number of didactic and clinical lectures.

Treatment of Lupus Vulgaris.—A 10 per cent. ointment of picric acid, of which the basis is white vaseline, has, in the experience of A. M. Giuseppe (Il Policlinico, Nov. 15, 1902) yielded better results in the treatment of lupus vulgaris than any other remedy. The author deems it best to alternate the use of the ointment with boracic acid lavage or dusting with bromphenol powder; as the effect of the picric acid is rather painful; the latter objection can, however, be readily overcome by preliminary application of cocaine, when necessary.

ORIGINAL ARTICLES.

BOILING AS A METHOD OF STERILIZING CATHETERS.

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A READY, thoroughly reliable method of sterilization of catheters, which the inexpert as well as the expert can use, and which can be adopted for all varieties of catheters without requiring the employment of cumbersome apparatus, or the expenditure of much time, is one of the greatest desiderata in surgery.

None can question that caloric, in sufficient quantity and applied for a proper length of time to each and every germ, is the most certain germicide, although many chemicals will destroy some bacteria and inhibit the growth of others with sufficient certainty to be reliable when proper time and facilities exist for their employment. In our former paper* we demonstrated that all varieties of catheters could be repeatedly boiled for any length of time requisite to secure absolute sterilization, provided proper precautions were taken. In these experiments however, germs cultivated for many generations in the laboratory were employed, and all experimenters recognize that micro-organisms thus treated become less virulent than those of the same species actually obtained from the living tissues of the human or animal body.

In consequence, germs obtained by cultures from actual cases of cystitis, and colon germs taken from cases of appendicitis, etc., were employed with the expected result, viz., that they were more resistant, yet readily destroyed by a longer exposure to heat.

Again, catheters used to irrigate infected bladders and others tied in in cases of cystitis were experimented with. These showed that it is more difficult to sterilize catheters clinically infected than those artificially infected.

The fact that the larger the size of the catheter, the more quickly was heat sterilization effective, led to a most important practical discovery, as is shown in Experiments 84 to 91. These demonstrate that when catheters quickly subside to the bottom of the vessel all or nearly all air is expelled from their lumina, hence all germs are promptly subjected to moist heat, and second, the smaller calibered instruments require a longer time to sterilize because it is more difficult to get all the air out of their interiors. These observations serve to explain the differences in time stated by different observers as requisite for certain sterilization, as well as for discrepancies in our own observations. It has always seemed peculiar that streptococci, staphylococci and the colon bacillus, none of which can withstand boiling water, still maintained their vitality in some cases in catheters boiled even so long as 20 minutes. This was formerly solely explainable by the assumed imprisonment of germs in dried pus, blood or mucus, so that the moist heat took a longer time than usual to reach them, or where chemical germicides were employed, that these were decomposed or never reached the interior of minute masses of pus, etc., one of the chief objections to chemical sterilization. Air in a catheter will for long periods only permit the exposure of germs to a comparitively low and absolutely inert temperature; and prevents the softening down and penetration of dry pus, blood or mucous by caloric.

The discovery of the fact that even after filling with ordinary tap water, *i.e.*, water which adds additional germs but which expels all air—one-fourth of the time only is requisite to sterilize badly infected catheters, removes the last vestige of objection to boiling by reducing the period requisite. Guyon contends that without preliminary cleansing half an hour's boiling is requisite to obtain sterilization; we have shown that, provided the air be expelled from the interior of the catheter, 10 minutes will invariably suffice with the most seriously infected instrument.

It being in many instances impossible to wait 24 to 48 hours for the formalin disinfection, even if the necessary apparatus were obtainable, it is clear that for emergency work, this method is out of court, while chemical sterilization (see experiments in first paper) requires a prolonged sojourn of the instrument in the solution, which in the case of the English catheter, if repeated frequently, soon destroys the polish of its surface.

As a preliminary to the conclusions warranted by the present paper, it may be well to quote those reached as the result of our first experiments. This is all the more advisable as we refer to them in the final conclusions of our present communication:

1. An infected rubber catheter cannot be completely sterilized by boiling under 4½ minutes (*i.e.*, after artificial infection with attenuated germs).

2. Mechanical cleansing from all dried pus, coagulated blood or mucus will render sterilization easier and will demand a shorter time to be effective.

3. Elastic (English web) catheters and soft rubber catheters can be repeatedly boiled for five or more minutes without roughening of their surfaces or diminution of their elasticity and strength.

4. Chemical sterilization by immersion in a $^1/_{2000}$ mercuric chloride solution for five minutes does not sterilize any variety of catheter which has become infected, at best only inhibiting the growth of the germs, for if the mercuric salt be precipitated by ammonium sulphide the germs will grow freely when implanted in culture media, as shown in Experiments 60 to 63.

6. Should corrosive sublimate be employed for

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* A Preliminary Note on the Sterilization of Catheters: a Bacteriological Study, C. B. Nancrede and W. H. Hutchings. MEDICAL NEWS, Nov. 23, 1901.

the sterilization of catheters, it must be in a concentrated solution and the catheter must remain in it for a much longer time than the usual period considered amply sufficient in the laboratory, no mere washing with any chemical solution being efficient for an infected instrument.

7. Formalin vapor will sterilize infected instruments in 24 hours (see Experiment 64); how much shorter time will be sufficient we have not as yet determined, but propose to do so in the future.

8. All methods of sterilization commonly employed should be continued for much longer periods than the minimum time required for destruction of germs in the laboratory.

9. English web catheters can apparently be more readily sterilized by heat than can soft rubber catheters, probably on account of their interior construction.

In commenting upon these tentative conclusions, which we believe our experiments warrant us in drawing, we would point out that the germs employed are probably even less resistant to sterilizing agents than are those of the same species actually contaminating catheters which have been employed for cases of cystitis, because of the well-known loss of virulence of germs long cultivated upon artificial media. We propose to remedy this defect in our future experiments by procuring germs from actual cases of cystitis.

Our present conclusions are as follows:

1. Although the washing with warm soap-suds is an absolute prerequisite to most methods of chemical sterilization and is an excellent precaution, in the method of employing caloric we recommend, it is not necessary, as shown by Experiments 84 to 91 where no difference was observed in the time and thoroughness of sterilization when this precaution was omitted, when compared with Experiments 78 to 83 where previous washing was done.

2. One of the chief obstacles in the way of catheter sterilization has always been the oily lubricants. The boiling temperature promptly liquefies the vaseline usually employed, which will be seen floating upon the surface of the fluid mechanically carrying away with it numerous germs mingled or adherent to the cold, semi-solid lubricant.

3. In our first paper we showed that the English catheter was more readily sterilized than the soft-rubber instruments, and what is of greater importance, can be repeatedly boiled without material damage, if proper precautions are taken.

4. Experiment 65 (first paper) shows that the English web catheter can be boiled for any length of time without damage in a saturated solution of ammonium sulphate. As this boils at 104° C. it is superior to plain water, but subsequent washing in sterilized water is requisite to remove the crystals of the salt which are deposited on cooling.

5. The only precautions requisite in boiling English catheters in plain water are those necessary to prevent their coming directly in contact with the bottom of the vessel in which they are boiled—this can be done by enveloping them in gauze, or a towel.

6. Finally, these numerous experiments incontestably prove, that caloric can be successfully employed for all varieties of catheters with the exception of the soft French instrument, provided all air is expelled from the interior; (2) that this essential having been secured, although in a great majority of cases five minutes immersion in water which is actually boiling will suffice, ten minutes of actual ebullition should be employed, especially for the smaller calibered instruments; and (3) that a previous cleansing with warm soap-suds is desirable although not essential, reducing as it does the time of exposure requisite to sterilize the instruments. As previously stated, the employment of a saturated solution of ammonium sulphate is desirable for English catheters but is not essential and detracts from the simplicity of the method.

EXPERIMENTS.

The lubricant in all cases was vaseline which had been sterilized by heating and placed in collapsible tubes while very hot. Each catheter, after being used in the infected bladder, was placed in a sterilized Petri dish and allowed to become thoroughly dry. It was then removed and subjected to the sterilizing process after which it was placed in bouillon and incubated 24 hours. If no germs were present at the end of this time it was considered sterile. The receptacles used were 14 inch ignition tubes. These will contain the catheter without any kinking, while it can be transferred from the boiling water to the bouillon with less danger of contamination. The bouillon had in all cases been previously incubated 24 hours at 38° C. Controls were made in every experiment.

Experiment 1.—Catheter inoculated with pure culture of colon bacillus, obtained from appendiceal abscess, allowed to dry, after which it was immersed in boiling, sterile water one-half minute. It was then placed in bouillon, incubated at 38° for 24 hours, at the end of which time it was sterile.

Exp. 2.—Catheter treated as in experiment 1, boiled 1 min., Negative.

Exp. 3.—Catheter treated as in experiment 1, boiled 1½ min., Negative.

Exp. 4.—Catheter treated as in experiment 1, boiled 2 min., Negative.

Exp. 5.—Catheter treated as in experiment 1, boiled 2½ min., Positive.

Exp. 6.—Catheter treated as in experiment 1, boiled 3 min., Positive.

Exp. 7.—Catheter treated as in experiment 1, boiled 3½ min., Negative.

Exp. 8.—Catheter treated as in experiment 1, boiled 4 min., Negative.

Exp. 9.—Catheter treated as in experiment 1, boiled ½ min., Positive.

Exp. 10.—Catheter treated as in experiment 1, boiled 1 min., Positive.

Exp. 11.—Catheter treated as in experiment 1, boiled 1½ min., Negative.

Exp. 12.—Catheter treated as in experiment 1, boiled 2 min., Positive.

Exp. 13.—Catheter treated as in experiment 1, boiled 2½ min., Positive.

Exp. 14.—Catheter treated as in experiment 1, boiled 3 min., Negative.

Exp. 15.—Catheter treated as in experiment 1, boiled 5 min., Positive.

Exp. 16.—Catheter treated as in experiment 1, boiled 5 min., Positive.

Exp. 17.—Catheter treated as in experiment 1, boiled 5 min., Positive.

Exp. 18.—Catheter treated as in experiment 1, boiled 5 min., Positive.

Exp. 19.—Catheter treated as in experiment 1, boiled 5 min., Negative.

Exp. 20.—Catheter treated as in experiment 1, boiled 5 min., Negative.

Exp. 21.—Catheter treated as in experiment 1, boiled 6 min., Negative.

Exp. 22.—Catheter treated as in experiment 1, boiled 6 min., Negative.

Exp. 23.—Catheter treated as in experiment 1, boiled 6 min., Negative.

Exp. 24.—Catheter treated as in experiment 1, boiled 6 min., Negative.

Exp. 25.—Catheter treated as in experiment 1, boiled 6 min., Negative.

Exp. 26.—Catheter treated as in experiment 1, boiled 6 min., Negative.

Exp. 27.—Catheter used to irrigate bladder infected with colon bacillus was allowed to dry, after which it was boiled five minutes, placed in sterile bouillon, incubated at 38° for 24 hours. Result positive.

Exp. 28.—Catheter treated as in experiment 27, boiled 6 min., Negative.

Exp. 29.—Catheter treated as in experiment 27, boiled 6 min., Negative.

Exp. 30.—Catheter treated as in experiment 27, boiled 6 min., Negative.

Exp. 31—Catheter treated as in experiment 27, boiled 6 min., Negative.

Exp. 32.—Catheter treated as in experiment 27, boiled 6 min., Negative.

Exp. 33.—Catheter treated as in experiment 27, boiled 7 min., Negative.

Exp. 34.—Catheter treated as in experiment 27, boiled 8 min., Negative.

Exp. 35.—Catheter treated as in experiment 27, boiled 9 min., Negative.

Exp. 36.—Catheter treated as in experiment 27, boiled 10 min., Negative.

Exp. 37.—Catheter treated as in experiment 27, boiled 11 min., Negative.

Exp. 38.—Catheter treated as in experiment 27, boiled 12 min., Negative.

Exp. 39.—Catheter used to irrigate bladder, infected with streptococcus pyogenes and colon bacillus. Allowed to dry in sterile dish, after which it was immersed in boiling water 10 minutes, incubated at 38° C. for 24 hours, at the end of which time the result was positive.

Exp. 40.—Catheter treated as in experiment 39, boiled 10 min., Positive.

Exp. 41.—Catheter treated as in experiment 39, boiled 10 min., Positive.

Exp. 42.—Catheter treated as in experiment 39, boiled 10 min., Positive.

Exp. 43.—Catheter treated as in experiment 39, boiled 15 min., Negative.

Exp. 44.—Catheter treated as in experiment 39, boiled 15 min., Negative.

Exp. 45.—Catheter treated as in experiment 39, boiled 15 min., Positive.

Exp. 46.—Catheter treated as in experiment 39, boiled 15 min., Negative.

Exp. 47.—Catheter treated as in experiment 39, boiled 15 min., Negative.

Exp. 48.—Catheter treated as in experiment 39, boiled 15 min., Negative.

Exp. 49.—Catheter treated as in experiment 39, boiled 15 min., Negative.

Exp. 50.—Catheter treated as in experiment 39, boiled 15 min., Negative.

Exp. 51.—Catheter used to irrigate bladder infected with colon bacillus and staphylococcus pyogenes aureus, allowed to dry, immersed in boiling water 10 minutes, after which it was incubated in bouillon at 38° C. for 24 hours, at end of which time it was positive.

Exp. 52.—Catheter treated as in experiment 51, boiled 10 min., Positive.

Exp. 53.—Catheter treated as in experiment 51, boiled 10 min., Positive.

Exp. 54.—Catheter treated as in experiment 51, boiled 10 min., Positive.

Exp. 55.—Catheter treated as in experiment 51, boiled 15 min., Negative.

Exp. 56.—Catheter treated as in experiment 51, boiled 15 min., Negative.

Exp. 57.—Catheter treated as in experiment 51, boiled 15 min., Negative.

Exp. 58.—Catheter treated as in experiment 51, boiled 15 min., Negative.

Exp. 59.—Catheter treated as in experiment 51, boiled 15 min., Negative.

Exp. 60.—Catheter treated as in experiment 51, boiled 15 min., Negative.

Exp. 61.—Catheter treated as in experiment 51, boiled 15 min., Negative.

Exp. 62.—Catheter treated as in experiment 51, boiled 20 min., Positive.

Exp. 63.—Catheter treated as in experiment 51, boiled 20 min., Positive.

Exp. 64.—Catheter treated as in experiment 51, boiled 20 min., Positive.

Exp. 65.—Catheter treated as in experiment 51, boiled 20 min., Negative.

Exp. 66.—Catheter treated as in experiment 51, boiled 20 min., Negative.

Exp. 67.—Catheter treated as in experiment 51, boiled 20 min., Positive.

Exp. 68.—Catheter treated as in experiment 51, boiled 20 min., Positive.

Exp. 69.—Catheter treated as in experiment 51, boiled 20 min., Positive.

Exp. 70.—Catheter treated as in experiment 51, boiled 20 min., Negative.

Exp. 71.—Catheter treated as in experiment 51, boiled 20 min., Positive.

Exp. 72.—Catheter treated as in experiment 51, boiled 20 min., Positive.

Exp. 73.—Catheter treated as in experiment 51, boiled 20 min., Negative.

Exp. 74.—Catheter treated as in experiment 51, boiled 20 min., Negative.

Exp. 75.—Catheter treated as in experiment 51, boiled 20 min., Negative.

Exp. 76.—Catheter treated as in experiment 51, boiled 20 min., Positive.

Exp. 77.—Catheter treated as in experiment 51, boiled 20 min., Positive.

Exp. 78.—Catheter used to irrigate bladder, infected with streptococcus pyogenes and colon bacillus. Was washed thoroughly in a strong soap solution made in warm sterile water, after which it was boiled five minutes, placed in bouillon and incubated at 38° C. for 24 hours, at the end of which time it was negative.

Exp. 79.—Catheter treated as in experiment 78, boiled 5 min., Negative.

Exp. 80.—Catheter treated as in experiment 78, boiled 5 min., Negative.

Exp. 81.—Catheter treated as in experiment 78, boiled 5 min., Negative.

Exp. 82.—Catheter treated as in experiment 78, boiled 5 min., Negative.

Exp. 83.—Catheter treated as in experiment 78, boiled 5 min., Negative.

Exp. 84.—Catheter used to irrigate bladder, infected with streptococcus pyogenes and colon bacillus, was filled with tap water, care being taken to expel all air from its lumen. No effort was made at mechanical sterilization. The ends were clamped with sterile clamps. It was then immersed in boiling water for five minutes, incubated in bouillon at 38° C. for 24 hours, at the end of which time it was sterile.

Exp. 85.—Catheter treated as in experiment 84, boiled 5 min., Negative.

Exp. 86.—Catheter treated as in experiment 84, boiled 5 min., Negative.

Exp. 87.—Catheter treated as in experiment 84, boiled 5 min., Negative.

Exp. 88.—Catheter treated as in experiment 84, boiled 5 min., Negative.

Exp. 89.—Catheter treated as in experiment 84, boiled 5 min., Negative.

Exp. 90.—Catheter treated as in experiment 84, boiled 5 min., Negative.

Exp. 91.—Catheter treated as in experiment 84, boiled 5 min., Negative.

Exp. 92.—English catheter tied in urethra and bladder of external urethrotomy. Left in place five days, at the end of which time it was removed, dried in sterile dish, boiled five minutes (care being taken to expel all air from its lumen) and incubate at 38° C. in sterile bouillon; at the end of 24 hours there was no growth.

Exp. 93.—Catheter treated as in experiment 92, boiled 10 min., Negative.

Exp. 94.—Catheter treated as in experiment 92, boiled 15 min., Negative.

Exp. 95. Catheter treated as in experiment 92, boiled 5 min., Negative.

VERATRUM VIRIDE AS AN ANTITOXIC.*

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The National Medical Dictionary defines an antitoxic as "an antidote," and Webster's as an agent "counteracting poison." The Century Dictionary broadly describes an antidote as a "medicine adapted to counteract the effects of poison or of an attack of disease." And further, "a counteracting power or influence of any kind." With this wide scope the term has been chosen to serve in connection with this paper.

On December 3, 1900, I read a paper, which appeared in the Medical News, March 2, 1901, respecting the administration of "Veratrum Viride in Some Conditions of Toxemia." A more extended use of this drug has confirmed my previous experience as to its efficacy as an antoxic, until it has become my firm conviction that, in grave conditions of sepsis, it is one of the most potent remedial agents of the whole materia medica.

The per-orem ingestion of the drug found illustration in a number of instances of appendicitis and peritonitis narrated in the former paper. Since the previous report cases of sepsis following abortion, sepsis as a result of traumatic injuries, cases of pleuro-pneumonia, one case of appendicitis, conditions of the liver and kidneys producing more or less marked signs of toxemia, and toxic poisoning, as manifested by muscular cramps and hives, in all numbering 27 cases, have been successfully dealt with by this method of treatment. It is not intended, however, to present them in detail, or to more than allude to the internal employment of veratrum viride. The general observations upon the behavior of the medicine will cover its action after internal exhibition as well.

In the paper already cited were reported nine cases successfully treated by subcutaneous injections of veratrum viride. We have now to present nine additional cases illustrating the action of this method of application.

Case I. Eclampsia.—Mrs. H., aged thirty-eight years, American. Was called to see her Dec. 3, 1900, at three P.M. She was at term in first pregnancy. Had suffered all day with an excruciating headache, dizziness and double vision. Shortly before I was summoned she had fallen down a flight of five steps and was taken up unconscious. When I reached her she was in a state of unconsciousness, eyes open, staring and crossed, oscillatory convulsive movements of eyeballs, and spasms of muscles of face, arms and legs. There were forcible rolling and upright movements of body without aim, requiring the exercise of great strength to restrain. Urine was scanty and highly albuminous. Gave an injection into the left thigh of 20 drops of Norwood's tincture of veratrum viride, followed in half an hour by 15 drops more. The pulse rate was reduced to 38 beats per minute. Copious sweating, salivation, retching, and vomiting of mucus and bile followed soon after the second injection, together with complete cessation of convulsive movements. By six o'clock there was a full return to consciousness. Complaints of double vision and dizziness. Retching and vomiting ceased by seven o'clock, after which she slept quietly.

The os uteri was dilated an inch, and was soft and dilatable. Slight labor pains every 15 or 20 minutes. At 11 o'clock active labor pains commenced and delivery was accomplished in the natural way at three A.M. She had a normal puerperium and involution.

Case II. Pneumococcus Infection.—G. J., male, aged eighty-two years. Was called to attend him the evening of March 4, 1901. He had spent some time in the forenoon in the chill air of a house, unoccupied for several months. In the evening he had chill and vomiting, followed by a temperature of 103¾° F., difficulty of breathing, short, hacking, restrained cough, and pain at the lower, outer portion of the left lung, with fine crackling sounds. Pulse 108, full and bounding. He was at once given a hypodermic injection 25 drops of Norwood's tincture into the upper anterior portion of the right thigh.

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This soon produced copious perspiration, salivation, retching and vomiting of mucus and bile. The pain ceased within 15 minutes. In about three hours the retching and vomiting terminated and the temperature was normal. The pulse fell to 54 per minute. The patient remained in bed the fifth of March, although in all respects normal, but upon the sixth he rose early, and was about the house all day.

Case III. Pulmonary Tuberculosis with Secondary Involvement of Apex of Left Lung.—A. D., female, aged twenty-six years, American. This patient had been under the care of the late Dr. J. T. Whitaker, by whose direction she had spent the winters of 1898-9 and 1899-1900 at El Paso, Texas. She came to me June 8, 1900. There were mucous and blowing murmurs over the entire right lung with increased resonance to percussion over the upper anterior portion. There was cough, rapid respiration, pulse 120, feeble, scanty muco-purulent expectoration with night sweats of moderate severity. The last winter she had not improved at El Paso, in fact, there had been a loss in weight and strength. She had been much confined on account of fever, and had experienced much deprivation from want of proper nourishment. As home conditions were in every way favorable, she was advised against removal for the winter. Accordingly she passed through the cold season very well, losing but a few pounds in weight; had been enabled to ride about very often in the open air, make visits to the city and enjoy the intercourse of friends. The inclement, cloudy weather of March, 1901, however, was inimical to outdoor exposure. She became affected with la grippe, had fever ranging from 100½° F. to 103° F., and profuse night sweats. On April 2, 1901, there were evidences of the apex of the left lung becoming involved, dulness on percussion, fine crepitation, very rapid respiration, temperature of 104½° F. and very considerable pain in coughing over the upper anterior portion of the left chest. At 4.30 P.M. she was given hypodermically, into the upper part of the right arm, 30 drops of Norwood's tincture. As she lived some distance in the country I had to leave immediately to catch a train. Upon reaching home, telephone messages were awaiting me to the effect that the patient was at the point of death, retching and vomiting, was flooded with perspiration, could not see, was pulseless and gasping for breath, but without pain. Assurance was given that she would not succumb, but would remain terribly sick for perhaps two hours longer. A test of temperature made at that time showed it to be normal. She had no more fever for three days and during that time there was a lower pulse range than at any other time during my observation of the case. At the time of injection it escaped observation that the needle was inserted in proximity to the brachial nerve. This caused a neuritis, swelling and inflammation along the course of the nerve, and very great pain for a period of 24 hours. It subsided by the end of the fourth day, but on account of it I could not secure consent to any more injections. She was, however, placed upon Norwood's tincture, six drops four times daily, internally, which was continued through the summer until her departure for El Paso again in September, 1901, whither she went of her own volition, and where she died last August.

Case IV. Convulsions. Carbolic Acid Poisoning.—K. A., female, aged twenty years. Was summoned in haste to this case at three P.M., May 9, 1901. Found her unconscious with convulsive movements of legs and arms, and transverse vibratory movements of eyeballs. The history obtained was that after a visit to the water-closet she was found lying senseless in the hall at the entrance to her bedroom. Pulse was 132 and feeble, respiration rapid and labored with much mucous accumulation in the throat. Administered hypodermically, 20 drops of Norwood's tincture into the upper portion of the left thigh. No actions apparent in half an hour, injected 15 drops more of the drug. In 15 minutes there was vomiting and retching of mucus and bile. Dr. Joseph Eichberg, under whose care she had been, came into the case about five o'clock. There being a smell of carbolic acid about the fluids ejected, investigation in the bath room revealed a four-ounce bottle of pure carbolic acid exhausted of about one-half its contents. Examination of the mouth and throat showed the soft palate, uvula and pillars of the fauces whitened as though by some caustic substance. At six o'clock pulsations in the radial arteries were extinct, the breathing was stertorous, and the case seemed hopeless. At seven o'clock pulsations in the radials were distinct, 72 per minute, and there were indications of returning consciousness in the opening of the eyelids in obedience to loudly repeated commands. By eight o'clock consciousness was well restored, and questions were answered intelligently. It was found that as much as two ounces of pure carbolic acid had been taken with suicidal intent. Complete recovery ensued. During the time she was under the influence of the poison the veratrum viride procured the evacuation of more than two quarts of bile and mucus. Without its aid there should unquestionably have been a fatal result. There was not the slightest action of the medicine upon the skin. It was all expended upon the internal glands.

Case V. Contracted Kidneys. Uremia.—Mrs F., aged fifty-five years, American. During January and February, 1901, was under treatment for giddiness, headache, nausea, pain in the back, sleeplessness and constipation. The urine was scanty, only two to four ounces being secreted in 24 hours. Examined chemically and microscopically it exhibited no abnormality. The heart's action was irregular and intermittent, 48 beats to the minute. The sounds were clear and without murmur. By the use of calomal, digitalis, diuretin, potassium, bitartrate, pulv. jalap comp., infusion of juniper berries and watermelon seeds, together with the free ingestion of Geneva water, the secretion of urine was increased to one pint daily. With this the heart's action became normal, and all the other symptoms abated. The patient thought herself well and left off treatment. The diagnosis was contracted kidneys, and no doubt was entertained that she should be heard from again. Accordingly, the eleventh of May the call came. There had been entire suppression of urine for 24 hours. Catheterization was not permitted, but it was evident from the flatness over the bladder, that there was no accumulation in that organ. Temperature was normal, pulse 72, regular and of good force. There was excruciating headache and pain in the back, nausea, double vision, fixed objects appeared dancing about, and the bed floated in space. Thirty drops of Norwood's tincture were at once injected hypodermically into the upper portion of the left thigh. There was no action whatever upon the skin, but the husband estimated that she must have ejected one gallon of bile and mucous during the three hours that the vomiting and retching lasted, after which about four hours of quiet sleep was enjoyed. Under the influence of the drug the pulse declined to 42 beats per minute. In the morning the symptoms were much abated. Four ounces of urine were passed which was normal to tests. She was placed upon six drops of Norwood's tincture after meals and upon retiring, was to drink freely of Eden Park spring water, to have 20 grains of compound jalap powder three times daily, and a vapor bath every evening. Under this treatment, while she has never passed more than 12 ounces of urine in 24 hours, she has been enabled to attend to her ordinary vocations, and to enjoy what she considers a comfortable state of existence.

Case VI. Gall-Stone Colic (?) Hypochondria.—H. M., aged sixty years, American. Has been troubled for years with a feeling of fulness about the stomach, most pronounced about an hour and a half after meals, when it becomes decidedly uncomfortable to himself and all in close association with him. Has had a number of attacks of severe pain, over the stomach and liver, coming on in the night, treated by various physicians with morphine hypodermically. Seizures were pronounced by different physicians to be biliary colic. Careful examination was never successful in finding gall-stones, nor was there ever any jaundice in connection with the attacks. For the last seven or eight years he has been losing money in his business, and has never been free from mental worry. Has imagined he had heart disease, the commencement of grave lesions of the central nervous system, tuberculosis or cancer of the digestive organs. About midnight of June 17, 1901, found him rolling about upon the bed apparently in great agony, with hands clasped over his epigastrium. Pulse 72, irregular and intermittent. Temperature normal. Abdomen tympanitic. Gave 30 drops of Norwood's tincture by hypodermic injection into the left thigh. In 15 minutes the pain disappeared. Free retching and vomiting of bile and mucus and copious perspiration. The pulse fell to 46 per minute, full and regular. He several times ejected at one gush a half-pint of greenish-black bile, and the amount of pure bile vomited was not less than a quart, besides freeing himself of several quarts of mucus and perspiration. Since this time there has been a notable improvement. He has had but one attack of epigastric pain, which occurred July 16, 1901, and was quieted by a hypodermic injection of water. He has complained much less and has resorted less to nostrums than ever before.

Case VII. Thermic Fever. Acute Delirium.—H. D. M., aged seventy-eight years. American. Has had for some months the premonitory illusions of senile dementia, and has been affected with chronic bronchial catarrh. June 30, 1901, found him with slight facial paralysis of right side, loss of power of lower extremities, speech thick, somnolent, marked arcus senilis. Falls asleep before completing an answer to a question and employs words without meaning. Temperature 100½° F., pulse 108, weak, intermittent, irregular, respiration 40. Given a calomel purge and cold sponging. July 1. Morning temperature normal, pulse 72, intermittent, bowels acted freely. Answers more readily. Right side of face no longer blank, can elevate right angle of mouth; has more power over lower extremities. The atmospheric temperature at noon was 102° in the shade. At two o'clock he became wildly delirious, tugged at sheet and night dress, reached after imaginary objects in air and struggled with remarkable show of strength to get out of bed. Pulse 72, weak, irregular and intermittent. Temperature 102½° F. At five o'clock temperature 104½° F., and he was so wild as to require the exertion of great force to hold him in the bed. He was given a hypodermic injection of 30 drops of Norwood's tincture into the upper part of the left thigh which produced vomiting of bile and mucus and free perspiration. In fifteen minutes was as quiet as a lamb. At eight o'clock was transferred to the private ward of the city hospital where he rested fairly well through the night. He passed into a confirmed state of senile dementia, and after a few weeks' stay in the hospital was sent to Longview where he passed away a month or two later.

Case VIII. Convulsions.—R. L., aged fourteen months, American. This child was seized with convulsions October 7, 1901, the result of infectious pleuro-pneumonia, two other children in the same household being under the treatment for the same disease. When I reached him he had had two tonic convulsions, and was unconscious, with spasmodic twitchings of the face, arms and legs. Respiration rapid and labored, with mucous rattle in the throat, skin surface cyanotic, temperature 104° F. Fifteen drops of Norwood's tincture were given hypodermically, and the issue was awaited with anxiety. Within 10 minutes there was complete relaxation, retching and vomiting, copious perspiration, the color of the skin assumed a more natural hue, the respiration became less labored, although the noisy mucous rattle continued; and, while there was absolute pulselessness for over an hour, the action of the heart became less rapid and of better force. Consciousness returned within two hours. Retching and vomiting continued for about three hours. Free movements of the bowels took place. Between the acts of vomiting the patient rested quietly, and, with the subsidence, passed into a sleep that lasted for several hours. Convalescence was assured two days afterwards.

Case IX. Convulsions. Opisthotonos.—Mrs. X., widow, aged fifty-one years, American. In August, 1894, had several attacks of headache with general muscular spasms, eventuating in opisthotonos, coming on about once a month. Hypodermic injections of morphine seemed to be the only means of controlling the paroxysms. In January, 1895, was taken with brachial neuritis affecting right arm and shoulder. The arm was practically useless for six months. In the spring of 1895 became affected with cerebro-spinal meningitis, which prostrated her for four months. Recovered and was fairly well for a year. In November of 1900 had severe attacks of pain in the back of her head, with spasms and opisthotonos. In February, 1901, was confined to bed, and was bedfast until July. Headache was persistent; convulsive attacks occurred almost daily. During all the time, from August, 1894, hypodermic injections of morphine were used freely by different physicians, and she was provided with a hypodermic syringe and morphine tablets which she made use of herself. Since July, 1901, she has had no spasms, but has suffered continuously with pain at the base of the brain, and with a feeling of weakness and rigidity of the muscles of the neck, as though they were insufficient to support the weight of the head. On this account has been obliged to recline most of the time. Had insomnia and aggravation of the headache at night. Came under my care June 16, 1902. The skin sallow, conjunctiva tinged a muddy yellowish hue, lips and gums were a grayish-blue, the tissues flabby, and she was without energy or animation. The treatment was confined to a placebo, directions as to diet and personal hygiene, and a request to be summoned at once, in the event of any spasmodic seizure. June 28, the call came. The body formed a beautiful arch from the head to the heels. Low moaning cries of "Oh, my head! my head!" issued from the lips. The eyelids were tightly closed, and forcible retraction revealed the pupils rolled up, or down, or sideways to avoid the direct gaze. In the convulsive gyrations, too, there was revealed a scrupulous care not to improperly disarrange the drapery. Twenty drops of Norwood's tincture were injected into the upper part of the right thigh at once. Within 10 minutes the moaning ejaculations ceased, and there was complete muscular relaxation. In half an hour, there being no action upon the skin, and no retching, 15 drops more of the tincture of veratrum viride were injected. This was shortly followed by copious perspiration and salivation, retching and vomiting of bile and mucus. She complained of difficulty of breathing, and of blindness, and for one hour and a half was pulseless, although the heart's action was regular and of good force. The disquieting effects of the drug all passed off in three hours and a half, after which she rested quietly, and slept at intervals through the night. In the morning she was a different woman. The heaviness and stiffness had nearly disappeared from the base of the head, there was no headache, nothing but prostration from the depletion of the night before. The skin and conjunctivæ had cleared up wonderfully, and the expression, from being sodden, had some show of animation. In fact, she was a new woman. The persistent headaches, the brachial neuritis, the cerebro-spinal trouble, and the pains in the lower extremities pointed to a specific basis for the hysteria, probably an early infection from her husband. She was given once daily, for 30 days, a deep injection of benzoate of mercury into the muscles of the buttocks. Under this treatment, improvement was marked and progressive, until at the end of it, she expressed herself a well woman, only lacking the full vigor of her earlier years.

Supplementing the cases just related, Dr. Milton J. Bliem, of San Antonio, Texas, writes, under date of August 13, 1902: "During the past 10 years I have always used veratrum viride in puerperal eclampsia. Within this time I have had six cases of this kind and have lost only one. That was a case of most terrible toxemia; there was severe hematogenous icterus and the blood was disorganized. Convulsions set in before labor, which had to be induced, and forcibly carried out. During three days consciousness never returned. The veratrum viride did not help, nor did anything else, including salt infusion. Perhaps if I had used the large doses you do I might have saved the case. In all the other cases, veratrum viride acted promptly, though I had to repeat the injection in several cases, but I have never given more than 15 minims hypodermically at a single dose. I can say that I have come to depend upon veratrum viride more than all else together."

In reviewing these cases, with others previously reported in the paper earlier referred to, it may be remarked that reflection leads to the conclusion, that in some a larger dose of the drug was given than was required to educe sufficient therapeutical effect. It is believed that 20 drops of Norwood's tincture is the proper initial hypodermic dose for an adult, to be followed by 10 drops more in half an hour, where it falls short of emesis. In no case has lethal termination been connected with its use, and no supporting means or modifying agents have been deemed requisite, however grave the symptoms manifested after its exhibition.

In this connection it may be well to state that the National Dispensatory directs that, on account of the irritant properties of veratrum viride, Norwood's tincture and the fluid extract should be well diluted with water when employed hypodermically. In all my cases I have injected Norwood's tincture without dilution. It leaves considerable soreness about the point of injection, which, in most instances, disappears in a day or two, although exceptionally continuing for several days or longer. The only severe irritation arising from its use is the brachial neuritis narrated in Case V.

Cases of profound toxemia demand prompt emesis and the removal of poisonous matters remaining in the stomach. For this purpose the veratrum viride should be introduced by hypodermic injections. This method should be adopted whenever there are convulsions, high temperature with delirium, suddenly developing, acute hysterical paroxysms, or acute abdominal pain due to colic, passage of gall-stone, nephritic or ureteral calculi. In acute indigestion with colic or gastralgia, it is one of the most effective means at command, promptly relieving pain and emptying the stomach of its contents. In abrogating pain it is not inferior to morphine, and, is greatly the superior of that alkaloid in its freedom from after effects. The complete relaxation of tissue induced by veratrum viride renders it exceptionally valuable for the excruciating pain occasioned by the passage of calculi, as well as to promote their passage downward by obviating spasmodic constriction. As a pain reliever it merits more extended trial, and it may come to displace morphine altogether.

Its internal ingestion is indicated where there is no critical condition and where a slow action of the medicine without perturbation of the system is desirable, as in toxic inflammations of the abdominal or pelvic viscera where vigorous contractions of the diaphragm or abdominal muscles might not be without danger.

Case V is perhaps open to criticism for the administration of a remedy exerting such marked depleting power in an advanced case of pulmonary tuberculosis, but no apology is offered for it, save that the situation called for speedy relief, the circulation was rapid and weak, the temperature high, the pain great, and respiration rapid with all the signs of acute infection of the left lung. Experience in its use with the feeble infant and the extremely aged had demonstrated its efficacy and safety, and, it was resorted to confidently and with good results, excepting the brachial neuritis accidentally occasioned. It has been reported as it occurred for whatever it may convey in the way of suggestion or caution to any whose notice it may attract.

Wherever the temperature has been exalted the reception into the circulation of a proper amount of the medicament has always been attended by a reduction to the normal or nearly normal. This is a consequence of heat separation through surface evaporation, and, probably also, of some special action of the drug upon the heat centers.

In Case IV from the state of the patient and the amount of carbolic acid swallowed, there is no question that a fatal issue would have supervened, but for the injection of the veratrum viride. It caused the expulsion of the unabsorbed acid in the stomach; through the secretion it excited from the mucous surfaces the acid was washed off, and diluted, thereby modifying or obviating the caustic effect; while by the antitoxic qualities of the agent the poison finding entrance into the blood was neutralized.

Case IX, it will be noted, exhibited well marked hysterical features; Case VI, a male, also had many of the stigmata of hysteria, and, a typical case of hysteria in the male was detailed in the paper previously referred to. The acute manifestations of hysteria are more promptly and thoroughly disposed of by means of the hypodermic injection of veratrum viride, than by any other article of the materia medica. Commonly the basis is in a disordered digestion, with formation of toxins, but there may be any other form of blood contamination, as in Case IX, or, both may exist together. The dehydration of the tissues achieved by an ample dose of veratrum viride is a factor in the amendment of no small merit. The fluids drawn off carry out with them waste and deleterious products, the removal of which from nerve cells annuls irritation and permits a rest of overstrained organs. The renewed and purified blood stream, in the meantime, is furnishing the means for a regeneration. In all these cases of perverted nervous action,—hysteria, hypochondria, neurasthenia,—there is pressure at the base of the brain. The continued nervous erethism begets a congested state of the cerebral circulation, the flow is sluggish in the veins, the intercellular drainage is impeded, the nerve cells are filled up with, and irritated by, peccant material. There is an excess of fluid and overflow into the ventricles. The veratrum viride by starting a flood-tide in the veins relieves this vicious circle.

In these cases a matter not to be overlooked is the moral effect of the agent. From the feeling induced by its action, it is realized that a most powerful medicament has been brought into play, and the impression abides that only a complete comprehension of the case could have moved the medical attendant to such extraordinary treatment. The belief is engendered that it has wrought a radical change in the economy, the will power is enthroned, and the resolve is formed that there shall be no further demand for its employment, if the patient is able to control the indications that should once more make it requisite.

Without having had opportunity to test it in tetanus or strychnia poisoning, from its antitoxic powers and its capacity to allay muscular spasms, it certainly presents paramount claims for service as a therapeutic means in such conditions.

The properties by virtue of which veratrum viride antagonizes toxemia, are largely inherent in its active principles, or alkaloids, jervia and veratroidia. Both alkaloids are said to "depress the functions of the spinal cord" and to abrogate its reflex activity without affecting the irritability of nerves or the contractility of muscles. This probably means that they produce a contraction of the processes of the nerve cells of the cord, whereby reflexes are inhibited without disturbing the properties of nerve or muscle cells. Salivation is a constant result of a sufficient dose of jervia. It slows the action of the heart and lessens arterial blood pressure. In large doses convulsions occur and death from asphyxia. Veratroidia has a feebler action than jervia upon the cells of the cord. It always induces vomiting, and, not infrequently, purging. In large doses convulsions ensue, less severe than those from jervia and death results from respiratory paralysis. It always reduces the frequency of the pulse, in small doses increases the force of the heart, but in larger doses weakens the cardiac action and lessens arterial pressure. Copious perspiration, in a large proportion of cases, is incident to the exhibition of both alkaloids in adequate amount.

It is possible that the jervic acid contained in veratrum viride, or some other acid present in it, may combine with the bile salts, setting free taurocholic and glycocholic acids which exert a stimulating effect upon the hepatic cells, and which, according to Pfaff and Balch, Schaeffer, Hupert, and others, increase both the fluids and solids of the bile. In this way it may maintain a claim to be a true cholagogue. The bile acids thus released, to some extent, find access to the blood. Color is lent to this hypothesis by the fact that the presence of bile in the blood and the action of veratrum viride produce similar phenomena: diminished motor and sensory irritability, reduction of the number of heart beats, and torpor and somnolence.

Clinical observation and physiological experiment not seldom run counter to each other. According to the latter, the large outpouring of fluids from the sudoriferous, the salivary and mucous glands, the stomach and gall-bladder, evoked through the agency of veratrum viride is merely a transudation through the vessel walls as a consequence of the lowered blood pressure. There is admitted an excitation of the pneumogastric nerve which inhibits cardiac action and only the negative statement is offered that it does not seem to stimulate the secretory nerves. A drug that may cause irritation of the pneumogastric, whose terminal filaments are so closely interwoven with those of the sympathetic secretory nerves, may also stimulate the latter, and that it does so there is no doubt in the mind of any clinician who has witnessed its full action. In this way may be solved the physiological paradox that it slows the action of the heart by a stimulation of the pneumogastric and lowers blood pressure by paralyzing the vasomotor nerves. The fact is, that only after the floodgates have been opened does the blood pressure fall, and then so great has been the withdrawal from the vital fluid that the pressure must decline from sheer depletion. Then may there be, and is, a lowering of vasomotor tonus, but it is secondary, ensuing upon an enfeebled circulation.

Militating against a vasomotor paralysis, as a primary influence, of the full dose of the agent, is the circumstance that perspiration, in a notable number of cases, does not occur after its administration, supplying an indication that the secretory processes of some organs are more strongly excited at times through its agency than those of others. Thus, in Cases IV and V, it will be noted that there was no sensible action upon the skin, while the amount of bile and mucus poured out were very great. If the fluids exude solely as a result of vasomotor paralysis, the skin should always be affected the same as the other organs of secretion.

That very active secretion upon the part of the liver cells ensues after full doses of veratrum viride is evidenced by the amount of bile ejected. Many times the quantity of bile the gall-bladder is capable of containing is cast out through the mouth by the acts of vomiting. No such quantity finds expression in the ordinary so-called "bilious" vomiting, when the suction force of the pump-like contractions of the diaphragm obtains to the same extent as prevails in the vomiting efforts following the administration of veratrum viride. Moreover, as showing a secretory activity of the cells of the stomach, the bile in veratrum viride emesis is always green from the conversion of bilirubin into biliverdin by the stomach secretions, while in "bilious" vomiting, after the stomach has been emptied of its contents, it is frequently expelled yellow, revealing a lack of stomachic secretion, and, by analogy, of increased bile formation also.

That the liver performs the chief depurating office for the organism is admitted from the fact, that all the waste products from the tissues and all the material elaborated by the digestive organs for the nourishment of the economy must be carried through it in the venous blood current to undergo its marvelous powers of transformation before they are fitted to enter the arterial blood stream, upon which the sustenance of all parts depend. The vital chemistry through which these changes materialize is as yet unsolved, but enough is known of the chemical disintegrations and new combinations proceeding within the great hepatic gland to render certain that noxious matters finding their way there, are so acted upon by the constituents of the bile as to modify or lose their harmful properties. They are then cast out from the system, or undergo further conversion to accommodate them to some purpose in it.

This stimulation of the liver cells, enhancing the secretion of bile beyond the normal, follows also the internal ingestion of the medicine in amount sufficient to slow the pulse and produce a feeling of nausea, without emesis. In such instances the bile follows its natural course into the intestine, and is carried off downward. Of undoubted value, also, in the elimination of toxic substances, are the secretions of accessory glandular organs excited to unwonted activity, as the mucous, the salivary and the cutaneous glands. Together the depurative forces of these organs may not be secondary to that of the liver. The kidneys also become subject to an augmented production of urine in consequence of the exhibition of veratrum viride, but the increased flow does not appear for 24 hours, and then it continues for several days. Such brief allusion has been made to these auxiliary emunctories only to make plain that what pertains to the largest gland of the body holds also for the small ones, and that they are all placed in the balance together. Their functions are often interchangeable and they perform vicarious offices for the others.

THE MORE FREQUENT DISEASES OF THE JOINTS: THEIR ETIOLOGY AND TREATMENT, WITH REPORT OF CASES.*

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THE more frequent diseases of the joints are those which are met with every day both by the general practitioner and orthopedic surgeon. From their frequent occurrence and their disastrous effects, we would have a right to expect that a searchlight of scientific investigation would be found turned upon them, and their causes established for the purpose of treatment.

But a retrospective view of the present state of our knowledge of the diseases of the joints shows just the opposite, and although the symptoms are both subjective and objective, and make themselves very conspicuous both to the sufferer and the doctor, the causative factors are very little known, and the present status of the treatment of joint diseases is a most confusing one. It is true, we no longer amputate a limb for a circumscribed abscess, as used to be the practice, before the publication of Brodie's[1] monumental work of 1850, on diseases of the joints, but even now patients are frequently found bound to the sick-bed for years and sometimes forever, suffering excruciating pain, or walking with crutches, with an agonizing knowledge that they are past all hope of recovery. Although there is nothing more pathetic than to see young lives, children and adults, wasted as chronic crippled invalids, orthopedic surgery has been treated not as a child, but as a stepchild of surgery, and yet it is the only branch of surgery that has not the destruction but preservation of the limbs as the result of its operations. So true is the fact that orthopedic surgery has been neglected, that Sherman found upon investigation that only 38 medical schools in this country are teaching orthopedic surgery.[2] If we bear in mind the fact that there were 156 medical schools in the United States in 1899,[3] we readily see why there are so many incurable cases of joint disease, when there ought to be but few.

In a systematic study of the joint diseases the following propositions demand an answer:

1. What are the diseases of the joints, and how do they originate? 2. Do the diseases of the joints permit of group classification, for the purpose of diagnosis and treatment? 3. Can there be a definite plan for the treatment of joint diseases, or must each case be treated upon its own merits? 4. When is operative interference advisable, and when not? 5. What are the best therapeutic agents in the treatment of the diseases of the joints? 6. Should we operate in tuberculous diseases of the joints?

In answer to the first, we must consider that which is known to everybody, but which no one has ever considered in relation to joint diseases, that the joints, being parts of the body, are subject to the same pathological influences as all other parts of the body; that disturbances in nutrition and excretion affect the joints as other parts, and that a simple inflammation in the joints may lead to most serious effects. These may be due to the tendency of the inflammatory exudation to organize and solidify, thus leading to anchylosis unless such exudates are removed by nature or by therapeutic means. Micro-organisms finding their way into the joints will here produce similar conditions, all conditions favorable to their existence being present. To name the diseases of the joints, in view of what has just been stated, would be useless for two reasons: (1) That the joints being subject to all diseases mankind is affected with, it would imply the naming of all known diseases to medical science. (2) The nomenclature of the joint diseases as used at present, in some instances, as a rheumatic synovitis, quiet diseases,[1] signify absolutely nothing. Others are misleading, such as rheumatic arthritis or osteo-arthritis, which include under one name as many different diseases and conditions, as would be included in the term "fever" if the word "fever" would be used to indicate all diseases.

To the second proposition, Do the diseases of the joints permit their classification in groups for the purpose of diagnosis and treatment? I must first invite your attention to the following report of nine cases, the first six being my own, from which I shall later make my deductions, answer the second and third propositions.

Case I.—K. L., female, aged twenty-six years, weight 89 pounds, consulted me in reference to her inability to use her right leg, complaining of severe pain in the knee- and ankle-joints. She was first seen in October, 1900, and has been under observation since that time. Rheumatism on the mother's side, negative on the father's side. Patient had chorea at puberty, suffers with dysmenorrhea, is of a neurotic temperament, gave a history of having sprained her ankle a year previously. The organs of the chest and abdomen negative. The right knee was found very much enlarged, hot, and painful to pressure, fluctuation and movement of the patella very free. The ankle and muscles of the calf in an atrophic condition. Examination of the urine showed traces of albumin, the blood contained an increased number of leucocytes. Aspirations of the knee-joint gave a thick, cheesy pus, which, upon a bacteriological examination, was found to be tuberculous. This decided the diagnosis. The patient was put upon strychnine, quinine, iron, and cod-liver oil; ordered to keep the recumbent position, and ice packed around the knee- and ankle-joints, until the local temperature was reduced. The knee was frozen with ether and aspirated and a large quantity of pus removed, then the joint was filled with alcohol, after a short time withdrawn, again filled with a 1 to 2,000 bichloride of mercury solution, which was allowed to remain in the joint for five minutes, then withdrawn and the joint flushed with plain sterilized water.

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*Read at the Nineteenth Annual Session of the Tri-State Medical Association of Mississippi, Arkansas and Tennessee, held in Memphis, Tennessee, November 11, 12, 13, 1902.

This same process was resorted to upon the ankle-joint and repeated every three months for one year. After each operation there was an elevation of temperature during the first 24 hours only. Between the operations, for the first three months the patient was in a recumbent position; after three months she was allowed to sit up, but not use her limb for nine months. During these nine months plaster of Paris bandages were applied every two weeks for three days each time, between the plaster of Paris bandages galvanic electricity, warm salt sponging and massage with cod-liver oil were used, alternating twice daily for the purpose of counteracting the atrophic conditions of the muscles. The patient was fed upon nourishing food, eggs, milk, cream, white meats, red meats excluded. At the end of the ninth month, patient was allowed to walk, which she did without discomfort. Her weight increased to 116 pounds. Patient was discharged in December, 1901, as cured, and has remained well since.

Case II.—H. M., male, aged eleven years, was brought to my office by his father. The history given was that while playing he fell from a fence several months ago, and injured his right knee. This pained him ever since, and finally attracted the parent's attention because of his inability to walk or to dress himself. Family history, mother very neurotic, no rheumatism, father's history negative. Personal history good previous to the accident. General physical examination negative. The right knee was found to be very much distended; the joint was totally disorganized, so that at first an amputation seemed necessary. The patient was put to bed, ice packed around the knee until the local temperature was reduced. The joint was then aspirated, patient immediately had a very severe rigor. The joint was rapidly washed with alcohol, filled with bichloride of mercury 1 to 2,000 solution, and flushed with sterilized water. The point of the needle entrance was then closed with collodion, and the patient given a hot rectal injection of normal salt solution. A hypodermic injection of strychnine $^1/_{80}$ of a grain, with 10 drops of whisky every 15 minutes. Patient passed a very bad night, during which I saw him twice, temperature 104° F., pulse too rapid to be counted. Stimulants kept up, cold sponging of the body and ice applied to the knee. The effect was very salutory, patient sleeping quietly for several hours. The liquid withdrawn from the knee was examined the next day, and found to contain staphylococci and streptococci. The patient was allowed to rest for four days, when the same operation was repeated, both times using ether for a local anesthetic, the second time the alcohol was omitted, no chill, slight elevation of temperature for the first 24 hours. Patient made a perfect recovery and was discharged the same month with a good sound limb.

Case III.—M. S., male, aged sixteen years; was attending him for lobar pneumonia. The crisis came on the ninth day, he was progressing well, when his mother called my attention to a large swelling of both knees and the right elbow-joint. The joints were very much distended and hot. Under the usual technic the joints were aspirated and treated in my customary way. The withdrawn substance was a pus of a thick creamy nature, which was found to contain the pneumococcus. Patient made a good recovery, and had no trouble from his joints.

Case IV.—B. F., a six-year-old boy; lobar pneumonia, the case was progressing slowly but well. On the twenty-eighth day both knees, elbows, and right shoulder-joint began to swell. On the next day they became very prominent, as though the joints might rupture from the large accumulation of fluid. The parts were very hot, the lymphatic glands infiltrated and hard to the touch.

The joints were all aspirated on five successive days, treated in the usual way; patient made a good recovery. The examination of the fluid showed the pneumococcus.

Case V.—This case is interesting as it occurred in the same house two months after the case just described, in A. F., the four-year-old sister of Case IV. She had no illness before or at the time, but slept with her brother before his illness and until I first saw him. Both her knees were very much infiltrated, the lymphatic glands prominently enlarged, the joints hot, the child had a general temperature of 103-105° F. The joints were treated in my customary way, and with the most gratifying results. The child was discharged after three weeks of treatment.

Case VI.—K. P., female, aged nineteen years, was confined to her bed before I saw her for about two years. She suffered much pain and swelling of her shoulder, elbow, and knee-joints, since she was five years old, when she passed, as I was told, through a severe illness of scarlet fever. Her family history was good. Patient suffers with dysmenorrhea, menstruation having begun at the age of sixteen years. The fluid in the several joints proved to be sterile. There was marked glandular infiltration.

The habitual treatment was adopted, with the result that patient was free from pain in three months, during which time three aspirations were made, but the treatment proved a failure, as the infiltration returned in a short time after each aspiration. Heat at a high temperature was used without any success; tonic treatment was of little benefit; specific treatment for syphilis adopted with no apparent improvement. During this time I lost sight of the patient. No diagnosis was ever made.

Case VII is one of the two cases reported by Dr. E. F. Wells,[6] the first case I omit, because it happened 20 years ago before bacteriological light could have been thrown on the case. The second case had been seen a few years ago. The patient had an attack of lobar pneumonia in which the crisis occurred at the end of a week. The left sterno-clavicular articulation was acutely inflamed. The joint disease appeared two or three days after the crisis. Fluctuation of the joint developed in 48 hours. A small opening was made, a thick creamy pus discharged, which upon examination was found to contain the diplococcus of pneumonia. The sac was then washed out with sterilized water, after which there was a thin serum exudate on two or three occasions when the dressings were removed; no further trouble. Healing was prompt.

Case VIII is a case reported by Dr. Frank X. Walls,[7] which he states to have been a typical case of arthritis closely following a case of measles. In this the smaller joints of the hands and feet were symmetrically involved. There was general enlargement of the lymphatic glands. The case did not respond to anti-rheumatic or tonic treatment. The final result is not given.

Case IX is a case reported by Dr. E. H. Ochsner,[8] in a young woman who developed arthritis deformans in 1893. She came under his care in 1897. Almost all her joints were affected and she was so crippled that she could not walk or feed herself. She was absolutely helpless and weighed only 87 pounds. After discovering that she suffered with hemorrhoids, he operated for the same, and found the bowels distended with a putty-looking decomposing fecal matter. He also had to break a few joints. The patient gained 53 pounds in weight and was enabled to walk.

From the cases above reported we make the following deductions: that in many instances the joint diseases are caused by micro-organisms of different kinds, and consequently the proper way to treat such cases would be to treat them for their specific causes, and for the purpose of diagnosing and treatment the following classifications suggest themselves as the most rational:

1. *Joint diseases due to traumatisms: Synovitis*, sprains, contusions, loose bodies.
2. *Diseases due to faulty excretion: gout.*
3. *Joint diseases due to constitutional germ-infection:* tuberculosis, syphilis, gonorrhea, pneumococcus and other germ diseases.
4. *Diseases due to malnutrition:* neuropathic (or Charcot's), hysteria, neuralgia, synovitis, fringes.

These four groups are based upon what I believe to be the true etiological factors, my belief being based upon the study of 64 cases, six of which are my own, and 58 obtained from medical literature reported as follows: 32 cases by Edward J. Cave[9], seven cases by Nathan Raw[10], seven cases by J. B. Herrick[11], two cases by J. C. Bloodgood[12], one case by A. F. Lemke[13], one case by E. H. Ochsner[14], one case by F. X. Walls[15], two cases by E. F. Wells[16], three cases by W. Osler[17], two cases by R. G. Cole[18].

The diagnosis of group three needs the microscope for its confirmation. You will notice that I have omitted the rheumatic group altogether, for the more we study the rheumatic group, the more we will find that it is a disease of the muscles and not of the joints proper.

The diagnosis of groups one and four depends upon the history and clinical behavior of the disease, and that of the second group upon chemical investigation.

With reference to the third proposition, after considering the cases reported and all that was in the medical literature within my reach, I have come to the conclusion that a uniform plan of treatment is impossible. My own experience and that of the authorities quoted seems to show that all cases should be treated on their own merits.

To the fourth proposition, When is operative interference advisable, and when not? I would say that the moment a joint becomes infiltrated and the infiltration does not disappear after 48 hours of rest, then it is the proper time to aspirate the joint. The operation is of benefit until there is serious destruction of the joint cartilage, after which this operation would be useless, but would require a more serious operation.

To the fifth proposition, What are the best therapeutic agents in the treatment of the diseases of the joints? I would put ice application, rest, partial immobilization, massage, bichloride of mercury from 1 to 2,000 solution, heat, cod-liver oil, electricity, suspension and constitutional alteratives and tonics, as the therapeutical agents par excellence in the treatment of the diseases of the joints.

To the sixth, the last but not least proposition, Should we operate in tuberculous diseases of the joints? I will say that I am aware that the text-books and the majority of the profession are against interference with any tuberculous affection of the joints. In our day, when the brilliant and daring surgeons have entered the lung tissue proper, when the heart has been operated upon with success, there is no reason why we shall not enter a tuberculous joint, remove the cause, and cure the sufferer from a lifelong invalidism and premature death. That this is feasible, Case I goes to prove.

In conclusion I wish to point out: (1) That no matter how bad or how far the disease of the joints may have progressed, that with our present methods, the sufferer can expect not only relief, but positive curative effects, if the proper steps in treatment are adapted; (2) that while we can have no general plan for the treatment of such diseases, we have by the aspirating needle and microscope a valuable uniform plan for diagnosis;

(3) that diseases of the joints being due to many causes, the systemic conditions, family and personal history of the patient becomes of the utmost importance; (4) that my method of treatment is a modified Phelps method, but superior to Phelps' in the following points: (*a*) Carbolic acid, if used in drop doses only, does not have the desired effect, in large doses it causes sloughing of the parts, while bichloride of mercury, if not allowed to be absorbed, accomplishes its purpose and can be used in any quantity; (*b*) the 1 to 2,000 solution, while not too strong, is strong enough for germicidal purposes; (*c*) the use of alcohol hardens the tissues and prevents the absorption of the mercury, which is washed out with sterilized water; (5) That while I know that it is the practice of the profession to condemn operations on tuberculous joints, I wish to urge the advisability and necessity of such operations. Let us treat tuberculous conditions, when possible, as any other septic condition.

Finally, let us hope that orthopedic surgery, if given ample latitude, will,—progressing with the time, advancing with the labor of the medical profession, the perpetual guardians of mankind,—efface those terrible germ diseases of the joints, which are so disastrous in their effects, thereby making useful human beings from what are now helpless sufferers.

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INTERMENSTRUAL PAIN.

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CASES of intermenstrual pain are being recorded. In these cases the pain occurs from the twelfth to the sixteenth day from the commencement of the preceding menstruation, in some cases it is paroxysmal, the attacks either coming on at intervals of several hours and lasting from five to fifteen minutes, or the pain is constant with exacerbations often of the greatest severity and resembling labor. It ordinarily lasts two days. In no case was there a menstrual discharge; but an increased amount of leucorrhea was observed. In most books the pain is described as ovarian; but in one case it appeared to be due to stenosis of the internal os, and in another was cured after a curetting for endometritis, and in this latter case the necessary dilatation and not the curetting may have caused the relief.

In one case which has come under my care in a young unmarried woman, who is of a highly neurotic temperament and suffered from dysmenorrhea also, I obtained good results by merely treating the general condition, and my diagnosis was that there was a spasmodic contraction of the cervix uteri—internal os—due to the extreme excitability of this organ in this neurotic patient at the time when the unimpregnated ovum was being cast off from the uterus. In a normal individual this act would be as painless as menstruation, but in an abnormal one—highly neurotic—as painful as her menstrual period. The following table will help to explain my theory as to the time when ovulation, menstruation and expulsion of the unimpregnated ovum occur. Supposing menstruation to occur on May 8, then I hold that ovulation occurs before, not at the same time, that a turgid, thickened condition of the uterus occurs into which the fecundated ovum sinks; but impregnation not occurring as it would in this case, the mucous membrane is disorganized and this constitutes the phenomenon known as the menstrual discharge:

May 1 or thereabouts, ovulation.
May 8 or thereabouts, menstruation.
May 20 or 22 or thereabouts, escape of ovum from uterus.
May 29 or thereabouts, ovulation again.
June 5, menstruation again.

If ovulation occurs a week or thereabouts prior to menstruation this is the proper time for impregnation. Menstruation, which is the sign of nonfecundation of the ovum, the mucous membrane of the uterus being depleted and restored to its former state, which had been changed to that of a mucous membrane ready for a fecundated ovum. After menstruation is over a new mucous membrane must be formed, and according to the old Levitical law, it seems sensible and natural that sexual intercourse was prohibited for the week following the menstrual discharge. The reason of the prohibition was that the cells of the new mucous membrane were not fully formed cilia by which the sperm cells are directed toward the ovum were not present and any sperm cells would not pass to the germ cell. This prohibition was an attempt to obey natural law; the mucous membrane of the expectant but disappointed uterus being at the end of this period replaced by a new one; fecundation might again be possible, but would it? Here is a normal mucous membrane, but one not prepared to nourish an embryo. Most observant women notice at about 10 days or two weeks after the onset of menstruation a slight discharge of clear mucus on suddenly arising from a stooping or recumbent position or on exertion; now this corresponds to the time of the "intermenstrual pain" noted in some cases, and also to the time (a week after menstruation plus menstruation equals about the 11 or 12 days of the Jews) prohibited by Levitical law. The escape of this unimpregnated ovum is painless if the cervical canal is normal, but if there be a stenosis, or an endometritis causing the ovum to be embedded in a mass of tenacious mucus enlarging the bulk of the mass to be discharged, or if the engorged inflamed mucous membranes cause a narrowing of the canal, or if on account of the highly neurotic temperament a functional spasmodic condition is aroused, then it will be a painful act. It might be said that this pain is ovarian and connected with ovulation, but the next ovulation is some time distant,—a week or so. This case of mine was benefited by general tonic treatment.

Now, the uterus having discharged this unimpregnated ovum, coitus may again occur, the sperm cells pass up to the Fallopian tube, there to await another ovum. It seems most probable that the period preceding menstruation is the proper time for coitus; for then an ovum is ready for impregnation and the uterus is ready to receive it. Some hold the view that the period of menstruation following impregnation is not suppressed but the one following it; but why this necessity of another ovulation? Does ovulation occur during pregnancy? Does not the true corpus luteum answer this question—its function being to maintain an equilibrium in the ovarian tissue which would not require to be maintained by this process if ovulation still continued.

Another theory may be brought forward, namely, that ovulation occurs at the time when "intermenstrual pain" is observed in these cases. It is a pain of a colicky nature, for the Fallopian tube is a muscular organ—no colic is possible in an organ not containing muscular tissue—and when (on account of some pathological condition of the tube it grasps the ovary and the ovum enters it) excessive muscular contractions are excited. The increased discharge from the uterus which is observed may be caused by a small degree of congestion incident to ovulation. The fact of "intermenstrual pain" occurring on the seventh, ninth, twelfth and fifteenth days after the cessation of menstruation would favor the idea of its connection with ovulation, and here again the Levitical law could be explained: for if ovulation took place somewhere between the seventh and twelfth days or even later after the cessation of menstruation there would be no use in intercourse taking place until then. To those who do not regard the Bible as a book any more inspired than the works of the present day it may not carry much weight that such a law was believed in and followed; but in many respects the Jews were a well-educated people, and they may have had a reason for the faith within them. If ovulation occurred between the seventh and twelfth day after the cessation of menstruation, a fresh ovum would be conveyed into the tube, there to be impregnated, and if impregnated it would then pass on into a uterus prepared to receive it; but if impregnation did not occur it would pass into the uterus and be carried away with the menstrual discharge.

By this last theory "intermenstrual pain" is a Fallopian tube colic, and it seems the more likely of the two theories.

Ovarian pain just prior to the menstrual discharge is a passive rather than an active congestion.

The second theory that ovulation occurs some length of time prior to menstruation may seem doubtful to those who regard ovarian pain a few days before the onset of the menstrual discharge as due to a congestion dependent on ovulation. Just prior to the menstrual discharge the uterus becomes very much congested, although if it is in a healthy condition no pain or inconvenience is felt; but if in a pathological condition—its vessels not being able to contain all the fluid they should—part of it is forced back on the ovarian vessels and a passive congestion of the ovaries follows, with resultant pain and heaviness, which is generally relieved after the menstrual flow is once established. If the ovaries are in a perfectly normal condition, this passive congestion may cause little or no disturbance; but if they, like the uterus, are in an abnormal state, discomfort will ensue. A reciprocative action seems to exist between these two organs, viz., during ovulation there is a slight passive uterine congestion evidenced by a discharge of clear, glairy mucus at the middle of the "intermenstrual interval": and during the establishment of menstruation there is a passive ovarian congestion. It is likely that even in the normal healthy condition of the uterus, this reciprocative passive congestion of the ovaries occurs.

In the majority of women at the establishment of the menopause there are excessive uterine hemorrhages. In this condition the ovaries are becoming atrophied, their vessels are diminished in size and number and their customary passive congestion cannot ensue, therefore the hemorrhage from the endometrium is more excessive. The circulation has not as yet become accommodated to the new order of things; following these excessive hemorrhages we have "hot flushes," a stage which may continue for some time and denotes circulatory disturbances in other parts and an attempt of nature to restore a circulatory balance, which later on is fully established.

MEDICAL PROGRESS.

MEDICINE.

Olive-Oil for Ulcer of the Stomach.—K. Cohnheim of Berlin was perhaps among the first to find that in certain affections, especially contractions of the pylorus, the methodical ingestion of olive oil was of advantage. He further recommended that in all forms of pyloric obstruction, large quantities of olive oil might be of service. A. Mathieu followed with the discovery of the effect that if olive oil be added to an Ewald breakfast, a decrease in the secretion of hydrochloric acid is noticed. If this is the case, and granting that the spasm and pain of the stomach, especially at the pylorus are due to hyperchlorhydria, one might argue that this disease also would be benefited by the use of olive oil, in large quantities. K. WALKO, (La Sem. Méd., Nov. 12, 1902) associated with von Jaksch, has been making experiments in this line, and has obtained very encouraging results. He has likewise extended his experiments to cases of ulcer of the stomach, a condition which is always accompanied by hyperchlorhydria of great or mild degree. The primary indications in treating such ulcers are to nourish the patient without irritating the ulcer, both of which are fulfilled by olive oil which has considerable nutritive matter and is entirely inoffensive to the mucous membrane, and does not cause any unnatural fermentation in the stomach. He begins by giving a few teaspoonfuls of the olive oil, followed immediately by some mouth-wash to remove the flavor. The dose is then steadily and slowly increased until about 150 c.cm. are given in a day, in three divided doses. If the patient shows an aversion to olive oil, it may be given as an emulsion, by means of a stomach tube. At the same time all other food by mouth is discontinued if the more grave symptoms do not begin to improve after five or six days of the oil treatment. No haste is made, moreover, during this time, to return to the usual washing out of the stomach. Moreover, olive oil acts as a corrigent of the constipation, which is so often present in ulcers of the stomach. The author has used this method of treatment in nine cases of ulcer with uniformly good results. Within two weeks he has found all the severe symptoms absent. He continues the administration of the oil, associated with suitable food, for another two weeks thereafter.

Cause of Gastric Hemorrhage.—Cases frequently die of gastric hemorrhage and at autopsy no real cause can be found for the bleeding. The diagnosis of capillary hemorrhage is then made. Since a very careful examination of the gastric mucous membrane will often bring to light small ulcers which would escape the superficial observer, M. TIEGEL (Münch. med. Woch., Nov. 25, 1902) believes that the diagnosis of capillary hemorrhage is often wrong. Severe bleedings are common with the smaller ulcers, since inflammatory changes are less frequent here. Hence thickening of the walls of the blood-vessels or obliteration of their lumen is not so common as in the larger defects, where in consequence, the hemorrhage will be less profuse or absent entirely when the process extends to the arteries. Besides, thrombi form more readily in the inflamed and infiltrated tissue.

Action of Antipyrine.—Starting with the assumption, based upon previous experimental work, that pyrexia is accompanied by an exaggeration of the normal conversion of the liver's glycogen into glucose, and that increased secretion of glycogen produces in the liver an increased temperature proportional to the increased general temperature, G. FERRARINI (Gazz. Osped., Nov. 16, 1902) has sought to determine the influence of antipyrine upon the glycogen secretion; and through treatment of liver-sections with antipyrine, in the thermostat, ascertained that that drug inhibits almost entirely the transformation of glycogen into glucose. Passing from experiments in vitro to experiments upon the living animal, the author starts with the principle that, if antipyrine inhibits the conversion of the liver glycogen into glucose, this effect must be produced either through a paralyzing action upon the nervous system or directly upon the hepatic cells. If the former, such paralysis probably occurs in the glyco-secretory fibers, discovered by Cavazzani, in the celiac plexus. To determine the latter point, the celiac plexus was isolated in the living animal, and subjected to electrical stimulation; small portions of the liver being removed immediately after such electrical excitation, and tested for glycogen; with the result that the effect of stimulation of the celiac plexus upon the glycogen-content of the liver, was much decreased when the animal was under the influence of antipyrine, as it was also when the animal was simply narcotized. Thus it seems evident that antipyrine exercises an inhibitory effect upon the hepatic glyco-secretion; and from the fact that this effect of the drug is manifest equally in the extirpated organ and in the living animal, the author inclines to the belief that its action is exerted directly upon the liver-cell. Ferrarini concludes, therefore, that the influence of antipyrine upon the temperature is partly due to its power to lessen production of body-heat, and such diminution is accomplished through arrest of hepatic glyco-secretion, which latter is, in some pyrexias, if not in all, markedly augmented.

Report of a Disease in the Philippine Islands Clinically Resembling Glanders.—From the biological laboratory of the Department of the Interior (1902, No. 1) a report is published by R. P. STRONG, of a disease clinically resembling glanders or farcy. In the first case referred to the laboratory a diagnosis of farcy had already been made by three veterinarians. But microscopical study revealed the true cause of the malady. While farcy owes its origin to one of the schizomycetes or fission fungi (*Bacillus mallei*), the disease under consideration is not due to bacterial infection at all, but one of the budding or yeast fungi (blastomyces). The disease starts as a small nodule situated in the cutis and frequently in the neighborhood of some slight abrasion. From the first nodule the infection spreads, apparently along the course of the lymphatics, and eventually many buds form. Frequently the adjacent lymphatics become swollen and arranged in a row presenting somewhat the appearance of beads on a rosary. The younger tumors are hard at first but later soften and form large abscesses. If left to themselves they finally open and leave ulcers with margins which are usually irregular. If incised early the abscesses are found to contain a bloody, purulent, tenacious material. The contents of the older tumors is yellowish-white, gelatinous and very tenacious. The disease extends gradually; in neglected cases it may spread over almost any part of the body and even invade the nasal mucosa. A mucous discharge from the nose then appears, and the picture now closely resembles glanders. In fairly severe cases there are slight fever and loss of appetite; in severe cases anemia and cachexia appear. Mild cases may run an almost afebrile course. Glandular metastases occur but metastases in the internal organs have not been observed. Occasionally sinuses form in the deeper muscular tissues. The disease is chronic; it may last for months but the prognosis is usually favorable. The nodules should be opened early, curetted, cauterized and cleansed with some antiseptic solution.

Scarlet Fever with Relapse.—Relapses in scarlet fever have not been frequently recorded. Many hold that in such cases the primary attack has not been scarlet fever, and that the relapse is merely the result of infection through confinement in a scarlet fever ward. The importance of recording cases of undoubted relapse is therefore very great. H. FRAZER (Lancet, Nov. 29, 1902) tells of a case in which no apparent doubt can attach itself to the diagnosis either of the primary infection or of that which evinced itself in the relapse. The patient was twenty years old, and was admitted into the Aberdeen Fever Hospital, June 8, 1902, suffering from scarlet fever. There was a well-marked punctate rash, accompanied by a suffused erythematous blush extending from the neck downward, all over the body. The eruption had appeared first on the day previous to admission. The tongue was much reddened and papillated; it was a typical raspberry tongue. The throat was much inflamed, but there was no membranous deposit. The submaxillary glands were slightly enlarged. There was no desquamation and the urine was normal. The morning temperature was 99° F., and that in the evening, 99.6° F. On the day after admission the patient's temperature rose to 102.6° F., and on the next day it was 103° F. Rheumatic pains in the left shoulder and both knee-joints were now complained of. Salicin was administered. On June 9 a carbuncle developed on the nape of the neck. Signs of fluctuation were evident on the twelfth, when an incision was made and the purulent contents evacuated. Healing took place rapidly. The rheumatism disappeared, the temperature became normal, and on the 19th the patient was able to get up. On the twelfth desquamation had been observed on the neck and hands, which gradually increased in amount, and by the twenty-second was very profuse. On the twenty-sixth, six days after the patient had been allowed to get up, a severe attack of diarrhea and vomiting occurred, and on the same day a very severe punctate rash appeared, which, by the next morning, extended over the whole body, the face being free. The tongue was thickly coated, the throat was much swollen and congested, and the submaxillary glands were enlarged. The temperature had risen from normal to 102.6°F. The urine contained no albumin. By the twenty-eighth, three days later, the rash had disappeared, the tongue was papillated and cleaning, and there was some grayish, membranous deposit on the throat, but the diphtheria bacillus was not found. The temperature gradually fell to normal, remaining so until July 3, when there was a slight rise for a day or two, and the urine contained a slight trace of albumin. Soon afterward the patient became convalescent. As already mentioned, the desquamation which followed the first attack was extremely abundant; that following the relapse commenced and extended in an identical manner. On the hands it was observed as a powdery substance, and was easily observed when drying the hands after washing. On the feet and legs it was, save for the lessened amount, similar in every respect to the primary desquamation. On August 4, after nearly two months in hospital, the patient was discharged free from infection. As regards the origin or the relapse or second attack, two explanations are, the author thinks, possible: (1) That it was simply an instance of auto-intoxication in the patient whose immunity was short-lived; (2) that a fresh strain of the poison was contracted by the patient on getting up. Coupled with the fact that immunity after the first attack was not fully developed, the latter theory is, he thinks, the most probable.

Cholera Antitoxin.—An opportunity to test in various ways the efficiency of the new cholera antitoxin and vaccine prepared by the Japanese was recently afforded to W. C. MABRY and H. C. GEMMILL (Jour. Am. Med. Assoc., Dec. 20, 1902), contract surgeons U. S. A. An epidemic of cholera had broken out on the transport Sherman just before entering Nagasaki harbor. A temporary hospital was established on shore with over 100 inmates, including medical staff and exposed cases. Ten further cases developed, of which six died. The antitoxin was used in eight cases of which four died, these being sick men whose ultimate recovery was doubtful anyway. Of the four which recovered two were very severe, and two early cases were apparently aborted. Marked amelioration of symptoms was observed in all cases, the effect on the diarrhea, vomiting, aphonia and anuria being marked. The prophylactic effects of the cholera vaccine was voluntarily tried on the writers and later given to 85 soldiers. The sequelæ were varying degrees of pain, induration and tumefaction at the site of injection, headaches, slight nausea, and more or less depression. Highest temperature 101° F., highest pulse 120. No symptoms were noted after the tenth day in any case. The blood-serum antitoxin is obtained from a horse immunized to the comma bacillus in much the same manner as that practised in the preparation of diphtheria antitoxin. The vaccine is not nearly so severe in its after-effects as that of Haffkine and the preparation is different. As much of a pure culture of comma bacillus as can be taken up on a 0.25 cm. platinum wire loop is mixed with 1 gm. of a 0.5 per cent. solution of sodium chloride, placed in a hot water bath at 60° C. for 30 minutes, then enough carbolic acid added to produce a 0.5 per cent. solution of that reagent. An injection of 1 gm. is believed to grant immunity for from four to eight weeks. A second of two gms. may be given seven days later, and a third of three gms. 21 days later, conferring immunity for 15 to 24 months.

A Case of Ulcerative Inflammation of the Gall-Bladder in Typhoid Fever Ending in Perforation.—On the twelfth day of the disease the patient of GUNDEHER (Bol. Gaz. Bot., No. 41, 1902) developed symptoms of acute perforative peritonitis. An immediate laparotomy did not reveal any perforation in the intestines. The peritoneal cavity was drained, the condition of the patient did not improve. At the autopsy a perforation was found in the gall-bladder. According to the author ulcerative inflammation of the gall-bladder is not rare in typhoid and is caused by the same typhoid bacilli, but it seldom causes perforation.

Primary Cancer of the Hepatic Duct.—The literature of this affection, gathered by LEON INGELRANS (Arch. Générales de Méd., Sept., 1902) includes 16 cases, about equally divided between the sexes, and ranging in age from twenty-nine to seventy-three years. There is little if any tendency to secondary involvement of other organs except of the liver by contiguity; therefore from the situation of the growth in the narrow canal, the symptoms of obstruction are manifest while the tumor is yet small, and long before there is any cachexia. However, if only one branch of the duct is involved there may be no symptoms of obstruction till later. The biliary vessels above the lesion are dilated, and the dilatations filled with mucus, bile or pus and with thickened walls; may be so numerous that the liver parenchyma actually resembles a sponge, or has an angiomatous appearance. Cirrhosis from obstruction is a common accompaniment. The liver is generally green, yellowish or grayish-green, or mottled. It is usually large and smooth, but may be normal in size or atrophied. The gall-bladder may be atrophied, the cystic duct being obstructed by adhesions or pressure; it may be distended with bile if obstruction is not complete; or it may be filled with serous or mucous fluid and of normal or diminished size. The cardinal and invariable symptom of the affection is chronic jaundice, and this is followed in due course by cachexia and in a comparatively short time (two to twenty-six months) by death. Accompanying the jaundice are marked itching and anorexia with special disgust for fat foods. Pain is sometimes severe, though it is not common; tenderness to pressure is almost invariable. The urine contains much bile pigment and the urea is diminished; the feces are clay-colored unless the duct remains permeable. The blood, in the author's case, showed 5,084,000 erythrocytes and 30,380 leucocytes, of which latter there were 85 per cent. polynuclear, 12 per cent. mononuclear and 3 per cent. eosinophile. Jenner had a case in which two days before death the red cells numbered 910,000, the leucocytes 9,000, and the hemoglobin 15 per cent. In cancer of the biliary passages there are four clinical types, viz.: (1) Form with large liver and large gall-bladder; (2) form simulating hypertrophic cirrhosis; (3) form without dilatation of the gall-bladder; (4) form without icterus. In cancer of the hepatic duct the third variety is most frequent, the first is not rare and the last does not occur. The diagnosis at the outset is impossible, but later one may consider its differentiation from the following: prolonged catarrhal jaundice, stone in the common duct, cancer of the head of the pancreas, cancer of the liver, cancer of the bile passages lower down, and hypertrophic cirrhosis. Catarrhal jaundice may last five months, and tends to have remissions with corresponding increase in the color of the feces, never the case in cancer. A calculus in the common-duct gives practically the same signs as cancer of the hepatic duct, unless the calculus is of the ball-valve variety when it allows remissions; also, according to Hayem, in cancer there is hypopepsia, and in lithiasis, hyperchlorhydria. Cancer of the head of the pancreas may be palpable but often is not; glycosuria is often absent, the salol test negative, and fatty stools may be due to suppression of bile alone, quite as well as to suppression of both bile and pancreatic secretion. As a rule, but not always, the gall-bladder is distended. Massive cancer of the liver is not accompanied by icterus, but nodular cancer is accompanied by jaundice in two-thirds of the cases, and the diagnosis is obscure till the nodules are felt. Hypertrophic cirrhosis may be accompanied by decolorized stools, and, on the other hand, cancer of the hepatic duct may give colored stools; in both, the spleen may be enlarged. The only differential point is the long duration of hypertrophic cirrhosis. Cancer of the common duct is almost always accompanied by dilatation of the gall-bladder, and the liver is hypertrophied; the liver is not enlarged in cancer of the pancreas or the ampulla of Vater. The treatment, of course, is surgical, if operation can be performed early.

Very Early Diagnosis of Acute Articular Rheumatism.—Of all the infectious diseases, acute articular rheumatism is perhaps that in which the physician can render the greatest service by early diagnosis and intervention. Indeed, salicylates are by so much the more effective, the earlier they are applied. They shorten the duration and diminish the intensity of the attack, and, thus far at least, decrease the liability to cardiac or other manifestations of the infection. P. ACHALME (Arch. Générales de Méd., Sept., 1902) observes that for two or three days preceding the rheumatic attack there is often an interference in the cardiac rhythm, with palpitation or irregular pulse. The pulse-beats occur in groups of unequal number and with irregular intervals, the heart beating in the same rhythm. The number of beats diminishes to between 50 and 60 to the minute, a distinction from arythmia due to neurosis, arterio-sclerosis, toxemia, asystole, etc., in which the beats are more frequent. At the same time the apex-beat is increased in force, but, strange to say, the patient is unaware of any cardiac difficulty. The subjective symptoms consist of lassitude, apathy, loss of appetite, perhaps gastric disturbance. When one meets these symptoms with the peculiar arythmia in a patient fifteen to thirty years of age, one should assume that a rheumatic invasion is taking place, and especially is the diagnosis probable, if the patient has shown a previous tendency to rheumatism. The cardiac arythmia is an expression of the invasion by the microbe or its toxins of either the nervous or muscular apparatus of the heart, and is a prodromal symptom occurring during the period of incubation or invasion.

Methemoglobinemia Due to Acetanilid.—A case without any marked constitutional symptoms is reported by R. C. CABOT (Phil. Med. Jour., Nov. 29, 1902) of a man, aged thirty-five years, who, afflicted with severe cranial neuralgia, took about 30 grains of acetanilid daily for almost six months. An intense general cyanosis was present, but with the exception of the pain, the patient felt well. The blood examination showed a dark-brown fluid, with characteristic methemoglobin reactions, but normal in other respects. The urine likewise showed the methemoglobin spectrum. Little improvement was noted in a month's time and two months later patient was reported in the same condition.

Segmentary Myocarditis.—To the French medical authorities belongs the credit of having called to the attention of clinicians and pathologists the special changes which take place in the condition known as segmentary myocarditis. According to Renaut the lesion is evidenced by a distinct symptomatology, consisting in slight anemia, weak, diffuse apex-beat and a soft murmur heard midway between the auscultation points of the mitral and aortic valves. At autopsy the heart appears flaccid, and the myocardium is friable and of a yellowish-brown color. Microscopical examination shows the fibers to be separated one from the other, owing to a softening and disappearance of the cementing substance which normally holds them together. The transverse striations are preserved, and there is no deposition of fat; but an accumulation of brown pigment is seen about the nuclei, which is sometimes present in enormous quantities. G. GIACOMELLI (Rif. Med., Nov. 3, 4 and 5, 1902) details the experience of numerous observers in this affection, and presents his own conclusions concerning it. He states that such fragmentation and disintegration of the myocardium are of most frequent occurrence in acute poisoning from mercury, chloroform and fungi, etc., as also in auto-intoxication. These changes are seen much less frequently in general infections, and they are of even graver import than fatty degeneration. Through animal experimentation he found that sudden contractions of the heart-muscle induced by electricity do not cause segmentation, either in healthy animals or in those in whom infections had been produced prior to faradization.

Anachlorhydria.—Absence of hydrochloric acid from the gastric secretion, its effects and treatment are the subjects of a paper by L. FERRANNINI (Rif. Med., Nov. 8, 10 and 12, 1902). Hitherto anachlorhydria has been considered chiefly as a condition secondary to carcinoma of the stomach, or other grave disease; yet its association with hysteria and neurasthenia is not infrequent. The condition of nervous excitation seen in hyperchlorhydria is in strong contrast to the depression of the secretory innervation which obtains in primary anachlorhydria; but that the two conditions have their origin in disturbance within the same sphere, though not of the same nature, is seen in the fact that anachlorhydria may succeed to hyperchlorhydria as a result of psychic traumatism, or, indeed, without apparent reason. Of the two principal functions of hydrochloric acid, proteolytic and antifermentative, the latter is the most important; and the ill effects arising from absence of that acid, are chiefly due to gastric, and secondary intestinal fermentation; while the proteolytic function may, to a great extent be fulfilled by lactic acid. The author has found it best to treat cases of anachlorhydria with drugs which excite secretion of hydrochloric acid, particularly pilocarpine and strychnine, rather than by supplying the deficiency through administration of hydrochloric acid.

Paradoxical Pseudo-Hypertrophy Following Infantile Cerebral Hemiplegia.—The rare phenomenon of hypertrophy occurring in the infantile cerebral palsies is reported by L. PIERCE CLARK (Jour. Nerv. and Ment. Dis., Nov., 1902). He has reported in all five of the 12 cases upon record. After a review of the literature the author proceeds to an analysis of all cases in which the hypertrophy occurs. The family history, intra-uterine life, birth, sex and causes leading to the stroke, throw no light upon the occurrence of the condition. All cases recorded prior to these in this paper developed in subjects of athetosis and hypertrophy was in those parts most agitated; but in four of his own the author found no athetosis, but a partial epilepsy of the post-hemiplegic type instead. The enlargement in some of the previously reported cases involved all parts that were paralyzed, even the breasts, testicles and face of the side involved showed hypertrophy. The skin, fat and muscles may all hypertrophy in a single case, although some muscle hypertrophy is present in every case. The hypertrophy has been in the upper extremity in all cases but one. The order for the increase of size of these parts is the arm in nine cases; the forearm in two; the calf in one. The particular muscles entering the hypertrophy in order of their greatest involvement are: Biceps, deltoid and triceps. The parts not hypertrophic follow the general rule of atrophy in such lesions. In two of the author's cases true fiber hypertrophy existed; an enlargement and increase of the muscle spindles were found. Usually hypertrophy and hyperplasia went hand in hand. In all cases the hypertrophy was found of the pseudo variety. The hypertrophic parts were found invariably weaker than those of the sound side. Bony hypertrophy was present in the author's, in Lannois's and Foyalle's cases. Occasionally the bones of the entire upper extremity may hypertrophy, although usually those underlying the enlarged muscles increase in size. The degree of circumferential enlargement varies from one-quarter to seven-eighths inch, although not usually more than one-half an inch. The author believes that the cause must obtain under the following conditions: "The lesion is cortical, slight and transient; the integrity of the elements remain more or less intact and a post-hemiplegic disorder of motility, such as athetosis or a focal epilepsy, by agitation of the paralyzed parts, causes the hypertrophy." The article is accompanied by excellent photographs showing the states of hypertrophy.

SURGERY.

Embolism of Superior Mesenteric Artery.—On account of the free anastomosis of the intestinal branches of this artery it has been considered by some almost impossible to cause gangrene from obstruction of one of the smaller branches. It has been definitely proven, however, that this sometimes occurs and there seems to be a special predisposition on the part of the intestinal wall to undergo rapid changes. Experiments have shown that ligature of one of the medium-sized branches causes such a lowering of the blood pressure in the affected area that an almost immediate degeneration begins in the walls of the capillaries and the tissues. In spite of the free anastomosis there seems to be a marked vulnerability of these vessels and a resumption of functions is rarely effected after the circulation has been obstructed for any length of time. J. Collier (Med. Chron., August, 1902) reports a case in which rapid gangrene followed embolism of one of the smaller branches (even a single intestinal branch) and offers this example to prove that these vessels are practically "end arteries," so far as the result of embolism is concerned. The blood pressure is so diminished that there is a regurgitation of blood from the portal system into the mesenteric tributaries and a hemorrhagic infarct follows.

Rubber Gloves.—At the present time gloves are in pretty general use throughout this country but are being discarded apparently in Europe, where they first received attention. R. T. Morris (N. Y. Med. Jour., Nov. 22, 1902) suggests that there are three chief ways in which bacteria reach the wounds of a patient: (1) By being carried from the roots of hair and the deeper layers of the skin where the incision is made through it; (2) by introduction from the surgeon's hands and (3), perhaps more important than any other, from the air. There are some cases in which gloves should undoubtedly always be used, such as diabetic and septic patients. In the latter cases the precautions should be taken for the protection of succeeding patients. On account of the extra encumbrance, induced by the use of gloves, it is believed that the law of compensation works out in this way: that the longer incisions and greater length of time required for an operation with rubber gloves allow more bacteria to fall into the wound than would be carried into the wound by the surgeon operating rapidly and neatly with bare hands, prepared by the best methods and depending upon the germicidal action of the blood serum to destroy any of the bacteria which make their way from the deeper layers of the epithelium of his hands. It is therefore believed that rubber gloves will be largely discarded in the future.

Extensive Burns and Their Treatment.—It is a well-known fact that extensive burns are followed by death more or less rapidly, in accordance with the extent of surface destroyed. H. Weydenheld (La Sem. Méd. Nov. 12, 1902) has concluded that the intoxication of the system is due, not to the various poisons secondarily formed within the organism, as is admitted by most authorities, but by poisons formed upon the skin in virtue of the destruction by the burn. He has therefore attempted to cure such symptoms by the removal of the skin with the hope of destroying the source of the poison. He has added to this general plan of the removal of the affected skin the injection subcutaneously of normal salt solution. By these combined procedures he has succeeded in prolonging life in some cases for many days, and in other cases he has entirely cured the patient. According to his view, the removal of the skin must be carried out very shortly after the accident. If delayed, a large quantity of the toxins will already have been absorbed. According to his own experience, he deems that in burns of the third degree, covering more than one-sixth of the whole surface, injection of artificial serum might be enough to prevent a fatal issue. This is not the case when more than one-sixth of the body surface is affected. At the same time it is necessary to at once begin to remove the burned skin and at the same time apply injections of normal salt solution. Naturally, if the burn is less extensive, the chances of recovery are still better.

New Treatment of Varicose Ulcer.—Most methods of treatment of these vexatious ulcers accomplish nothing more than the slow development of scar tissue of little resistance, and do not recognize the fact that the patient cannot, as a rule, be put at rest. Leroy and Maury (La Sem. Méd., Nov. 5, 1902) have developed the following dressing, which appears to be free from these inconveniences. For a half hour, starch bandages are immersed in a two-per-cent. solution of formalin. These bandages measure 15 feet long and 3½ inches wide. They are then squeezed very dry and plunged into the following preparation: Glycerine, 100 parts; refined white gelatine, 50 parts; oxide of zinc, 40 parts; boiled water, 180 parts. This preparation should be heated over a water bath until it is semi-liquid. The patient is then put to bed and the leg and ulcer is washed with a solution of formalin, and dried very carefully with sterilized compresses. Then the bandages, prepared as described, are wrapped around the leg, from the ankle to the knee. In half an hour the bandages are dry and comprise a kind of elastic boot, which protects the part in an admirable manner, without the least pain. If the ulcer is large and its discharge abundant, this bandage must be renewed every five days; otherwise, once in seven days. These authors find that a moderate amount of walking, far from being a disadvantage, is advantageous, because it stimulates circulation, and therefore encourages the healing of the wound. Under this treatment, ulcers will heal in from one to eight weeks, with a scar that is strong and soft.

Spinal Anesthesia.—The well-known unfavorable sequelæ of this method of anesthesia have led many to relinquish it. KOZLOWSKI (C'blatt. f. Chir., Nov. 8, 1902) describes a new method which he finds very satisfactory and in the main without these disadvantages of securing this form of anesthesia. He soon became convinced that the symptoms were due not so much to the bad effects of the cocaine or tropacocaine, but rather to the amount and kind of fluid injected. In the usage of most operators the menstruum consists of water. Since there is not a less irritating drug than tropacocaine, he concluded that the other factor—the water—was probably the cause of the trouble. He therefore determined to try the result of injecting tropacocaine itself in cerebrospinal fluid. With the very first case he was convinced that this is an easy procedure, rapid and convenient, and that no great difficulties accompany it. A similar procedure was suggested by Guinard, who reports 70 cases in which it was used, consisting chiefly of the concentrated solution of chloride of cocaine in water, one or two drops of which are rapidly mixed with some of the cerebrospinal fluid which has been withdrawn. Kozlowski's method, however, is as follows: He takes a sterilized, dried graduate, containing about 0.05 grams of tropacocaine in powder form. A needle is then driven into the spinal canal, between the second and third and fourth lumbar vertebræ, and the cerebrospinal fluid allowed to drip upon the tropacocaine. After a little shaking the drug mixes itself well in the cerebrospinal fluid, of which five grams are allowed to escape, thus forming a one-per-cent. solution of the tropacocaine without any addition whatever of water. The mixture thus formed is drawn into the syringe and immediately injected into the spinal canal. The tropacocaine which he used is Merck's directly from the bottle, without any special sterilization. Notwithstanding this, it has not developed any undesirable symptoms. Apparently the powder, at is comes from Merck, is already sterile. If it is desired to sterilize it again, hot air might be used or preferably an alcoholic solution made of it and permitted to evaporate slowly in a glass dish in order to form the crystals again.

Congenital Inguinal Hernia.—During this present year Arnschütz described a new method for operating upon scrotal hernia in children. For some time prior to the published description of this method P. KREMIN (C'blatt. f. Chir., Nov. 15, 1902) has been using the following method: An incision exposes the inguinal canal, being placed directly over it. After careful deepening of this incision, the sac of the hernia is opened and freed from all attachments to fascia up to its neck. After its contents have been carefully reduced, the neck of the sac is closed as high up toward the abdomen as possible by a purse-string suture, preferably of silk. He now twists the sac of the hernia for the entire distance between the upper pole of the testicle and the neck of the sac, so that the surface of the serosa, which formerly was innermost becomes outermost. He secures the sac in this position with a few stitches. The sac of the hernia together with the transversalis fascia and the cremasteric muscle and fascia are thus arranged in a cylindrical band, whose inner surface is the proper fascia of the hernia, and whose outer surface is the serosa itself. From this point on the other steps are the same as in the typical Bassini operation.

Acquired Dislocation of the Hip in a Child.—Dislocations of the hip of traumatic origin are rare in young children; therefore, the following example, noted by W. MACDONALD (Lancet, Nov. 29, 1902) may be worthy of note. On August 16, 1901, a female child, aged two years and eight months, was brought to the author by her mother, who stated that the patient had fallen that morning, and, in consequence of the fall, was unable to walk. Further questioned, the mother said that her three children were playing in a bedroom with a miniature theater when one of the figures dropped from the stage, and the child, in rushing across the room to pick it up, tripped over her brother's foot and fell upon the floor. The brother raised her and set her on her feet, but found she could not stand. The mother, finding her in this condition, carried her straight to the author's house. Although a bright, healthy little girl, she was much frightened, and resisted examination, so was sent home and seen later. The objective appearances were marked distortion of the left hip and undue prominence of the gluteal region. The limb was abducted and rotated inward, the thigh was bent slightly upon the abdomen, and the leg was flexed upon the thigh. The lower end of the femur crossed the lower third of the opposite thigh and the ball of the left great toe rested upon the instep of the right foot. There was, roughly, about one and a half inches of shortening, although this observation was not verified by measurement. The left trochanter lay well above Nelaton's line, and on rotating the limb, the head of the femur could be felt considerably above the acetabular ridge. From these characteristics there was no doubt that a dislocation of the head of the femur on to the dorsum ilii existed. Under chloroform, reduction by manipulation was attempted, but failed. Having, therefore, instructed the mother to fix the pelvis, the thigh was flexed at right angles to the abdomen, and slow, steady traction made in an upward direction. The limb was then adducted and rotated inward, and the caput femoris slipped into the cavity of the acetabulum with a distinct click. The limb was put up in a Liston's long splint and secured by a spica bandage. At the end of four days the splint was removed and the patient was permitted to lie on a sofa until the eighth day, when she was allowed to go about and it was found that her recovery was complete. With regard to the relative frequency of dislocations of the hip in children, the author has no statistics to offer, but finds that Erichsen tells of two cases which he met with in his own practice. In one of these—a child aged one-and-a-half years, the head of the femur was dislocated on to the os pubis; in the other there was dorsal dislocation in a boy six years old. Erichsen also mentions that Kirby had seen a case of dorsal dislocation in a child aged three years, and that Madge had observed a similar case in a child aged three and a half years, while Travers had a dislocation of the hip in a boy five years of age.

Traumatic Peritonitis.—It is extremely probable that when a blow on the abdomen, which does not cause perforation, is followed by peritonitis, that the inflammation is due to rupture of some hollow viscus and escape of its contents. If this rupture be large, the peritonitis is rapidly fatal, unless, by a laparotomy, the wound may be dealt with promptly. If the tear is minute, there will be very little extravasation, and perhaps only a localized peritonitis. The severity of the peritonitis depends chiefly upon the micro-organisms which fill the cavity. If these are numerous and virulent, the outlook is grave; but if few in number and comparatively harmless, the resulting peritonitis will be less acute, and perhaps serous in character. In the following case the rupture must have been small, although impossible of discovery at the operation, the bacteriological intervention must have been comparatively attenuated. The case concerned a traumatic peritonitis, followed by two separate attacks of intestinal obstruction. Three celiotomies in less than three weeks, with recovery, is reported by C. F. M. ALTHORP (Lancet, Nov. 29, 1902). A boy, aged eleven years, was admitted into the Bradford Royal Infirmary on May 14, 1901, with abdominal symptoms. While going home from school the previous afternoon, he fell and struck his abdomen against a gate-post. He walked home (a short distance) and was put to bed, as he was suffering from abdominal pain, and was blue and cold. He was sick several times, and next morning a physician saw him, and sent him to the Infirmary. He was in perfect health before the accident. On admission the abdomen was slightly distended but fixed and board-like. Nothing was made out by palpation. There was dulness over the whole breadth of the lowest three inches of the abdomen. Liver dulness was present. The tongue was furred. The temperature was 100° F. and the pulse was 100. A catheter was passed and normal urine was drawn off. A normal movement followed an enema. The boy did not look so ill as would have been expected had there been any serious visceral lesion, but as there were undoubted peritonitis and effusion, it was decided to explore the abdomen. An incision was made above the pubes, when a large quantity of yellow, flaky fluid escaped. The appendix, cecum, bladder, etc., all appeared to be normal. A sponge passed up toward the liver brought away small pieces of lymph, so another incision was made above the umbilicus, through which the liver, stomach, gall-bladder and duodenum were examined, but no lesion was found. The abdomen was mopped clean and the wounds were closed without drainage. The boy did well for 10 days, and then complained of abdominal pain. The bowels refused to act and he began to vomit. On the twelfth day the vomit became intestinal and the lower wound was laid open. A coil of gut was found adherent to the abdominal wall immediately to the right of the incision. The adhesion was freed, and as no other cause of obstruction was found on hasty exploration of the abdomen, the wound was sutured. The symptoms were removed at once, the bowels being moved within two hours of the operation, and again the boy did well until the seventeenth day, when symptoms of obstruction again appeared. The lower wound was again laid open, and the same coil of gut was found adherent as before, but much more densely. In freeing it the intestine was somewhat injured, and consequently some six inches of it were resected, a Murphy button being used. The boy made an uninterrupted recovery from this operation, the button was passed on the seventh day after the operation; and after a lengthy stay in bed to allow the scars to become firm he left the infirmary in good health on July 23. He was seen on June 5, 1902, looking fat and well.

Varicose Veins.—The frequency with which varicose veins occur in the lower extremities, especially in women, makes good knowledge of the various methods of treating them a necessary matter of common property for all who would succeed in medicine. The non-operative treatment, comprising hygienic, manual and mechanical measures may be entirely excluded excepting in cases of very mild degree. Such are, unfortunately, precisely the ones which do not seek relief. The condition is usually neglected until the only possible aid is derived from operation. Concerning this W. H. BENNETT (Lancet, Nov. 22, 1902) gives the following points: Localized masses of congenital varix, cystic dilatations and aberrant varicose veins in dangerous places (from point of view of liability to injury) should be dissected out. In the operative treatment of general saphenal varix the main point to bear in mind is that no matter how exaggerated the condition in the leg may seem, the cure or mitigation of the condition can only be accomplished by the removal of a portion of the long saphena vein, high up in the thigh, the nearer the saphenous opening the vein is interrupted the better, and in no case should the interruption be below the point at which the large posterior tributary from the inner and back part of the thigh joins the internal saphena. The author advocated and performed this operation as far back as 1883. No interference with the vessels in the leg is necessary, but there is no doubt that the improvement of the general condition is more rapid if three inches or thereabouts of the saphena are removed immediately below the knee. The author invariably does this after the high interruption has been effected. When well-defined cystic dilatations exist in the inner side of the knee, it is his practice to remove the whole of the saphena in the thigh, from the saphenous opening downward, stopping short just above the knee. When this is done the resection of the vein below the knee is unnecessary. As a practical detail in operations of this kind, it will be found advantageous to avoid leaving a scar along the inner side of the knee-joint, as such scars are liable to remain sensitive and irritable for some time. What has been said in regard to its being unnecessary to interfere with the veins in the leg after the high operation applies to ordinary cases in which the sole object is the arrest of the increase in the varicosity or to diminish or prevent complications arising in connection with it. In the external femoral set of varicose veins operative measures are only useful when the communication with the saphenal veins below is free. In such cases removal of from four to six inches of the more prominent portion of the varix on the outer side of the thigh is followed by general improvement, and the author is of the opinion that the operation in these cases, when occurring before marriage, ought always to be recommended, as the consequences arising from child-bearing are undoubtedly less severe if they are not entirely prevented, by the treatment. Much remains to be said upon this part of the subject. The author says he will remind us that before submitting a patient to the operative treatment for varix it is of extreme importance to be sure that the symptoms complained of are due to the varicose veins and not to some other cause.

Operative Treatment of Pulmonary Tuberculosis.—The objections against operative procedure in advanced pulmonary tuberculosis are many. A. LANDERER (Münch. med. Woch., Nov. 25, 1902) says that a good result can only be expected where there is a single, well-encapsulated cavity, or several of these, situated closely together and communicating with each other. Generally only a few of the cavities can be opened and drained, the others are not reached, since they are often not diagnosed. Even if the operation is a success, persistent fistulæ remain and part of the sputum is always voided through these. The wounds do not close and the cavities persist even after they have been incised, owing to the dense walls of the cavity, which will not fall together and obliterate the space. Hence the author recommends thoracoplasty with multiple rib-resections. Advanced cases are not good objects, since they do not stand the narcosis or the loss of blood and bad after-effects may develop after weeks, in the form of exacerbations of the process or a miliary tuberculosis may set in. Yet all of the author's cases did well. The ribs must be resected as rapidly as possible and the space laid bare should exceed the size of the cavity by at least one rib. The region over the heart and great vessels should be avoided on account of the pulsating scar which may result. A vertical incision is preferred and this may be converted into an L or T shaped one, if necessary. During after-treatment it is important that the secretion of the cavity is sufficiently expectorated. Hence small doses of morphine or even emetics may be given. The operation is not indicated in acute tuberculosis; the most suitable cases are the stationary or slowly-progressive ones. Slight fever is no contraindication. Good results have been obtained especially in tuberculosis of the lower lobes, since internal treatment here has so little effect. Improvement follows two to three weeks after the operation. The mechanism of the cure depends upon the removal of part of the rigid wall, so that the cavity can fall together. Hetol should be given before and after operation, to assist cicatrization.

OBSTETRICS AND GYNECOLOGY.

Surgical Treatment of Uterine Cancer.—Surgical intervention is worse than useless in uterine carcinoma when it is diffuse, in the opinion of L. M. BOSSI (Gazz. Osped., Nov. 16, 1902). The author lays down the following rules for operation: Hysterectomy is advisable in carcinoma of the cervix when the disease is limited to the portio vaginalis; and the vaginal route is then to be preferred. In carcinoma of the body of the uterus, the operator should, under chloroform narcosis, ascertain whether or not the tumor is limited to the uterus, in which case abdominal hysterectomy should be performed, but if there is the slightest involvement of the adnexa, surgical intervention is of no avail. Bossi utters a note of warning against the practice of operating upon the cervix in pregnant women, under the mistaken impression of the existence of cervical carcinoma; this disease being of the rarest occurrence in the pregnant, as shown by the fact that out of 20,000 pregnant women examined in the dispensary clinics of Genoa and Novara, but one case of carcinoma of the cervix was seen. He believes that many lesions, diagnosed as carcinoma, are in reality but vegetating ulceration, which are not of infrequent occurrence upon the cervix of the gravid uterus. Cauterization of such vegetations with carbolic acid and alcohol in equal parts, about every five days, usually suffices to bring about complete healing of the lesion.

Repeated Ectopic Gestation.—That a second tubal pregnancy is not a great rarity is shown by a collection of over 90 well-authenticated cases by B. H. WELLS (Med. Rec., Nov. 22, 1902) who also reports the history of a patient upon whom he operated for a ruptured tubal pregnancy and in a little over one year later he made a second abdominal section for the removal of the other gravid tube. The literature upon this subject seems to be very meager or rather the information which would be helpful in settling several etiological questions is lacking on account of the operators' carelessness in not thoroughly examining the other tube at the time of operation and submitting the specimens to careful microscopical examination. Of the various theories which have been advanced relative to the causation of ectopic gestation the author believes that the most potent factor probably results from a change in the epithelial lining of the tube following upon a mild infection of that duct and causing an increase in the time occupied by the passage of the fertilized ovum through the tube.

The Necessity for the Interruption of Pregnancy in Phthisical Workingwomen.—Eighteenth century writers regarded pregnancy as an advantage to phthisical women; it was supposed that if two women were suffering from pulmonary tuberculosis, the one of them who became pregnant was likely to live longest. Modern writers have wholly abandoned this view, and C. HAMBURGER (Berl. klin. Woch., Nov. 24, 1902) declares that it is now universally conceded that pregnancy and labor influence unfavorably the course of phthisis, because of their excessive demands upon the vitality of the woman, in virtue of which her susceptibility to tuberculosis is increased. The logical inference is plain: tuberculous women must not have children; if pregnancy occur, it must be interrupted in the interest of the woman. This inference, says Hamburger, is not frankly made as often as it should be. Only recently Kossmann has declared that "pregnancy is only to be interrupted when failure to interfere would inevitably result in the death of the mother during gestation and so cause the death of the fetus as well." Hamburger remarks that the problem must be approached according to the social class of the individual, because the demands during pregnancy upon the strength and vitality of women belonging to the working class are far greater than upon those of the more fortunate classes. The mortality from tuberculosis increases as the family income decreases. Hamburger therefore undertakes to support his position by giving a series of pictures of the actual life of pregnant workingwomen, showing how many children they have, what their incomes are, how many persons live in one room or sleep in one bed, and hence what probable outcome of tuberculosis in such circumstances is likely to be. Von Leyden and others emphasize the especial danger of repeated pregnancies occurring at brief intervals in phthisical subjects, and it is precisely among women of the working classes that rapidly repeated pregnancies occur. The treatment of tuberculosis in poor women is at best a difficult task. Its difficulties become overwhelming when pregnancy occurs. Good nourishment is indispensable; but during pregnancy there occur vomiting and stubborn anorexia. Workingwomen are denied good air, bodily rest, concentrated foods, careful nursing in confinement, rest after confinement. Hamburger considers the dangers of abortion, but does not regard them as serious in comparison with the greater risk of prolongation of pregnancy. It is argued that the probability of renewed conception and the necessity for renewed interference make any interference inadvisable. He replies that it is the duty of the physician to instruct phthisical patients as to the dangers of renewed conception. To those who hesitate to destroy the fetus because of the possibility of its developing into a healthy human being the writer points out that so far as the children of the poor are concerned such hopes are almost idle, because in this class of society, isolation from the mother is an impossibility and hygienic surroundings cannot be provided. For all these reasons he believes that pregnancy occurring in phthisical workingwomen should be interrupted; its interruption is demanded in the interest of the mother, of the family, of the community.

Importance of a More Radical Operation in Carcinoma Cervicis—The studies of J. A. SAMPSON (Bull. J. Hopk. Hosp., Dec., 1902) show that carcinoma of the cervix may form metastases in the small lymphnodes along the vessels and these nodes may have a diameter of not over one to 1.5 mm. Owing to this small size it may be impossible to feel these either in the parametrium or along the pelvic vessels and they may be discovered only accidentally or by cutting serial sections. In every case of hysterectomy for carcinoma of the cervix, the lymphatics along the pelvic vessels and also the parametrium should be removed en masse with the uterus, because an enlarged gland is not necessarily an invaded gland and cancer may be present in very small lymph-nodes which can not be palpated; therefore clinically it is impossible to always diagnose cancerous lymphatics. Should the ureter be adherent to the parametrium, the lower portion of it should be sacrificed and all the tissues from cervix to pelvic wall removed for if the ureter is dissected free the disease will probably return and a uretero-vaginal fistula will probably occur from injury to the blood-supply of the ureter. Following out these principles the steps of the operation recommended by the author are: (1) A preliminary catheterization of the ureters with silk bougies, before the patient is narcotized; (2) after the patient is narcotized she is placed in the perineal position and a long proctoscope is inserted into the rectum in order to get rid of any gas or fecal matter; (3) a row of interlocking sutures is now placed around the vagina, three centimeters below the growth. These sutures are passed with a large, curved needle, include large masses of tissue and extend laterally as far as the needle will permit, while a finger in the rectum prevents their being passed too deeply posteriorly. After all these sutures have been passed, they are tied; (4) a retention catheter is placed in the bladder. (5) the patient is now placed into the Trendelenburg position and the abdomen opened from symphysis to umbilicus. After packing back the intestines with gauze, the ovary on the side on which the ureter is to be resected, is grasped by a pair of forceps and pulled downward and outward so as to make taut the ovarian vessels and peritoneum covering the iliac vessels. The peritoneum is now split below and parallel to the ovarian vessels as high up as the origin of the internal iliac artery. Beginning at the origin of this, he dissects downward, removing the fat and lymphatic vessels from along the iliac vessels, thus exposing the branches and removing the tissue en masse. One should never dissect upward for (*a*) the instrument may enter the angle between the branches of the iliac vessels and may tear off one, (*b*) by dissecting downward, the fat and lymphatics can be removed en masse, (*c*) it is always safer to work from a more dangerous to a less dangerous region. After exposing the vessels down to the uterine artery, the ovarian vessels and round ligaments are cut. The uterine artery is tied twice at its origin, taking care to include in the ligature the vaginal artery, should it arise from the internal iliac, but not the superior vesicle. (6) The other side is treated in a similar manner, if both ureters are to be removed; if not, the exposure of the vessels is the same and the removal of the lymphatics may be similar, and the uterine vessels are tied and cut at their origin, and then lifted up and dissected away from the ureter, taking care not to injure its outer, vascular coat. (7) The uterus is now pulled upward and the bladder dissected free from the cervix and not the cervix from the bladder, for in the former, while there is greater danger of injuring the bladder, there is less danger of cutting into the diseased cervix. The dissection is carried on down to the ureters, and, if thought best, one or both are cut off close to the bladder. (8) The ureter should be amputated just above the place where the uterine artery crosses it, and all the tissues lateral to the cervix, including the lower portion of the excised ureter, may be dissected from the pelvic wall. If the lower end of the ureter is not to be sacrificed, the parametrium is dissected free mesially to the ureter. (9) The utero-sacral ligaments are next cut, and the rectum is dissected from the cervix and vagina. (10) The dissection is now carried on around the growth on all sides and down the vagina to the preliminary catgut ligatures. The gaping opening of the large veins can be seen in these cases, some thrombosed and others empty, perfectly controlled by the preliminary catgut sutures. Wertheim's clamps are now applied to the vagina and the vagina is cut below them and the tissue removed. (11) The uretero-vesical implantation. The operation at present takes 2½ to three hours but is justifiable when one considers that after the ordinary operation, recurrences were noted in 87.7 per cent., with greater experience no doubt the operation will be done more rapidly and thus the mortality considerably reduced.

PHYSIOLOGY.

Physiological Observations in a Balloon.—Two aeronautical expeditions were undertaken by H. v. SCHROETTER and N. ZUNTZ (Pflüger's Archiv, Nov. 5, 1902) for the purpose of investigating certain changes in the blood and in the respiratory exchanges of gas. They found that after a stay of 10 hours at an altitude of 5,000 meters the morphological constitution of the blood is not changed. The pulse and the blood-pressure remain unchanged. The authors employed a method invented by Hénocque for determining the rate at which the tissues reduce oxyhemoglobin. By means of a pair of clamps the capillary circulation in the mucous membrane of the lip was isolated from the general circulation; light reflected from the surface of the lip and examined by means of the spectroscope, showed the spectrum of oxyhemoglobin; the bands peculiar to the latter disappeared as soon as the oxyhemoglobin was reduced by the tissues. The French observers found that the time necessary for the disappearance of the oxyhemoglobin bands was diminished at a high altitude, which indicated an accelerated reducing activity of the tissues. The authors, however, found that no change takes place. They also discovered that the ventilation of the lungs is increased, but not as the result of the diminished pressure of the air, really as the result of the action of the other meteorological factors. A qualitative change in the oxidative processes, consisting in an increase in the respiratory quotients (obtained by dividing the amount of carbon dioxide exhaled by the amount of oxygen inhaled, in one minute), begins at the height of 4,000 meters. The subjective manifestations produced by scarcity of oxygen do not go hand in hand with its objective expression as measured by the respiratory quotients. In individual experiments the slight increase observed in the income of oxygen, is explained by the greater respiratory activity produced by the action of other muscles, by shivering and uncomfortable postures.

The Determination of the Nitrogenous Constituents of the Urine with Corrosive Sublimate.—The growing importance of the knowledge of the mutual relations of the nitrogenous urinary constituents, according to E. FREUND and R. FELLNER (Ztschft. f. Physiol. Chemie, Oct. 31, 1902), left to be desired a method whereby the amount of the extractive nitrogen might be determined in the form of a precipitate. While corrosive sublimate has been known as a precipitant for uric acid and the xanthine bases, and has been largely used, particularly for the determination of the latter, yet this substance in watery solution has failed in the determination of kreatinine and urea. The authors have finally succeeded in precipitating the nitrogenous constituents totally by treating urine with a sufficient quantity of a saturated watery solution of corrosive sublimate and with an excess of sodium carbonate.

The Passage of Albumin through the Placenta.—The discovery of the oxyhemoglobin spectrum in the venous blood of the umbilical vein by Zweifel was, according to A. ASCOLI (Ztschft. f. Physiol. Chemie, Oct. 31, 1902), the first demonstration of the passage of a normal constituent of the blood through the placenta, and the old controversy over the theory of Mayou that the placenta is the respiratory organ of the uterus, was finally settled. Harvey promulgated the view that the placenta, like a digestive organ, elaborates the nutriment of the fetus, and Claude Bernard attributed to the placenta a glycogenic function. Of the normal blood constituents finely emulsified fat penetrates through the placenta with as much difficulty as white blood cells; on the other hand, water sodium chloride and sugar can pass through the placenta into the fetal blood. Whether albumin can pass through unchanged or in the form of peptone, or whether it is formed synthetically in the fetal organism, has not been proved. The author set out to investigate this problem, availing himself of the recently discovered biological reaction for albumin, *i.e.*, the production of specific precipitating bodies in the blood by the injection into the latter of solutions of various forms of albumins. He arrived at the following results: If large quantities of heterogenous albumins be injected into the subcutaneous cellular tissues of pregnant animals, the former will be detected in the maternal and often, at the same time, in the fetal blood. If the reaction in the maternal blood is moderate or slight, as is the case when small quantities are injected or when large quantities are administered per os, the reaction in the fetal serum will be usually negative. In all cases there is a decided difference in the strength of the reaction between the maternal and the fetal sera; in the former it is always stronger than in the latter. After the administration of large quantities of egg albumen per os, the presence of this substance can be demonstrated in the blood of pregnant and parturient animals but not in that of the fetus. This is not a manifestation of any inhibitory action of the fetal serum; it is rather to be considered as a particular function of the placenta, probably of the nature of a digestive act.

The Origin of Sarcom-melanin.—The large number of brown and black pigments included under the group called melanotic, can not, according to L. v. ZUMBUSCH (Ztschft. f. Physiol. Chemie, Oct. 31, 1902), be considered as forming a uniform class. The early investigators taught that all bodily pigments are derived from the coloring-matter of the blood. Later it was maintained by Dressler and then by Berdez and Neucki that this supposition can not hold. The latter believe that the pigment isolated by them from human melanotic sarcomata, to which they give the name phymatorhusin, is formed from albumin by a peculiar condensation. This view has been opposed by Mörner who considered phymatorhusin as a decomposition product, attributing to the boiling in hydrochloric acid its freedom from iron and its low content in nitrogen. From the iron content of his preparations this investigator concluded that melanin is a derivative of hemoglobin, although he admitted that the high percentage of sulphur is hard to explain. A noteworthy contribution to this subject is found in the work of v. Fürth and Schneider, "On Animal Tyrosinases and Their Relations to Pigment-formation." In this work the transformation-product obtained from tyrosin by the action of tyrosinase is considered identical with melanin. Whether tyrosinase is present in the human body or whether hemoglobin can, under certain conditions, play the rôle of such a ferment, is yet to be proved. That in a severe disease like melanosarcoma a ferment not provided in the normal organism, should arise, is hardly acceptable; a weak basis for this supposition might possibly be found in the contagiousness of these growths as occasionally assumed. Starting with the supposition that hemoglobin and sarcom-melanin are related to each other, the author conducted a series of parallel researches to determine the binding of sulphur in hemoglobin on the one hand and in sarcom-melanin on the other, starting out with the inquiry whether the discovery of cystin in sufficient amount might not quickly lead to a solution of the problem. He found that cystin is neither present in hemoglobin nor in melanin. Inasmuch as the sulphur-content, which in different preparations of melanin, especially phymatorhusin, is variable, is sometimes quite large, and inasmuch as in this respect these bodies differ markedly from hemoglobin, it seems remarkable that in both classes of substances no cystin-complex is to be found. In reference to the melanin investigated by the author, he considers it not improbable that this body is derived from hemoglobin by the action of some fermentative agent.

The Splitting of Albumin by Bacteria.—How far the splitting of albuminous bodies by bacteria is analogous to the splitting produced by chemical agents, *e.g.*, mineral acids, or by digestive juices, is not known. A. E. TAYLOR (Ztschft. f. Physiol. Chemie, Oct. 31, 1902) undertook the solution of this problem in a series of experiments to determine the action of different kinds of bacteria in proteid bodies. He reports the results of two investigations with casein as follows: It is not markedly split by the *Bacillus coli communis*, but is energetically split and decomposed by *Bacillus proteus vulgaris;* among the decomposition products are found with the greatest probability histidin and lysin.

The Effect of Sodium Chloride and Calcium on the Conductivity of Nerves.—As the result of immersing nerves in the so-called Ringer's solution, *i.e.*, a normal physiological salt solution containing traces of calcium salts, H. RIETSCHEL (Pflüger's Archiv, Nov. 5, 1902) found, in agreement with Gotch and Burch, that the conductivity is diminished. The author employed the interesting method of using the negative electric variation of the muscle as an index of the conductivity of the nerve, which method has the following advantages over the employment of the muscular contraction as an index: the curve is a steeper one and the mechanical latent period of the muscle is done away with.

HISTOLOGY, PATHOLOGY AND BACTERIOLOGY.

New Stain for Diphtheria Bacilli.—A modification of the Pioskowski stain to readily detect Klebs-Loeffler bacilli in fresh specimens from membranes or from cultures has been discovered by W. G. SCHAUFFLER (Med. Rec., Dec. 6, 1902). By this method the pole-stained bacilli of true diphtheria may be differentiated from the uniformly stained and smaller pseudo-diphtheria germs and may be so easily used that its importance is greatly enhanced. The solutions employed to make the stain are as follows: Filtered solution Loeffler's methylene blue 10.0 c.c.; filtered solution pyronin (Grübler's) 1.5 c.c. (pyronin 0.5 grams aquæ distill. 10.0 c.c.); three per cent. HCl. alcohol 0.5 c.c. (absolute alcohol 97.0 c.c., HCl [25 per cent.] 3.0 c.c.). The specimen is prepared as usual and covered by the above solution for one minute. It is then washed in running water, dried and mounted in Canada balsam. The above method will show the bodies stained blue, while the poles are a bright ruby red. The pseudo-diphtheria bacilli take on only the blue color. The bacilli of Asiatic cholera and of the plague, when stained by this method, show granular bodies in their interior, but these bodies are not metachromatic like those of diphtheria bacilli just described.

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EDUCATIONAL REFORM IN MEDICINE.

Prof. Osler faced a crowded hall at the Academy of Medicine a few weeks ago when he rose to open the discussion upon the reform of medical education in the United States. Representatives of New York schools and others interested in medical education in the metropolis formed the bulk of the audience, but New England and even Canada sent noted men to participate in the debate. This distinguished gathering of medical education was first of all a tribute to the professor of medicine at Johns Hopkins University; but it was also something more. It was the reflection of a widespread feeling of unrest, of the sense of practical aims only half accomplished, of the consciousness of educational ideals smothering beneath the heavy blanket of a regrettable opportunism. For it has come to be generally appreciated that the best work cannot be done so long as our medical schools fashion their methods to fit cramped resources or to correspond with the interests and convenience of individual professors.

It seems to be Prof. Osler's belief that when the student has completed his survey of the institutes of medicine and is ready to enter upon the consideration of disease proper, he should no longer be subjected to general lectures—that from this time on there should be no teaching without a patient as a text. First and foremost the student should be trained in the use of his own eyes and ears and hands in actual clinical observation. Probably no one questions the importance of this kind of teaching. The method proposed is so familiar in theory, and in practice so common, that its discussion at first blush seems a work of supererogation. But if one observes that it is proposed to make bedside and dispensary practice not a leading feature merely, but the beginning and the end of all third and fourth-year teaching, it becomes clear that what is intended would really be, for most medical schools in this country, a radical reform.

The discussion which followed Prof. Osler's address revealed a wide difference of opinion as to the expediency of his plan for schools other than Johns Hopkins; there a relatively high standard of scholarship and mental fitness prevails among the students and the school and hospital, for teaching purposes, are one. The debate at the Academy really occupied itself with two distinct questions; one of these was, What is the ideal method of teaching clinical medicine? the other, What is the best method of teaching large classes at the present time? In dealing with the first of these two questions we must ignore certain practical problems which are completely bound up with the second—for example, lack of hospital facilities, imperfect control of hospitals in which teaching can be carried on, etc. Another difficulty, which merited greater emphasis in the conference at the Academy, is the lack of teachers who can give to their work in the schools the capacity, the inclination, and the time which its proper performance demands.

There are plenty of men in New York who are willing to teach clinical medicine. How many competent men are willing to make this teaching their exclusive life-work? In most other departments of university work instruction is given by professional teachers; in clinical medicine instruction is given by private practitioners. The professor of chemistry or physics in the scientific school may be afforded leisure and facilities for private research, but he is not encouraged to devote three-fourths or nine-tenths of his time to private business enterprises. May not there be some truth in the statement that the medical school will not be able to do justice to its students until it has first constructed the proper footing for its teachers? We should not like to see the private practitioner excluded entirely from the medical school, but we should like to see, in every such school, a certain number of earnest workers devoting their lives to clinical research and clinical teaching. The teaching of medicine must be made a career, in and of itself. The school which first organizes its work upon this basis will attract to itself men of genius from all over the country and will give a powerful impetus to the cause of educational reform in medicine.

For New York the foundation of a medical school according to the foregoing plan seems just now an iridescent dream. If current report may be accepted, however, Chicago is at least one step nearer the goal. We are informed that the scheme for the reorganization of Rush Medical College contemplates the establishment of a series of college hospitals, medical, surgical, gynecological and obstetrical, and the endowment of clinical professorships which will be held by men who will devote their lives to the work of the college and its hospitals.

EXCURSIONS IN NEW YORK MEDICINE.

Under the title Excursions in Old-Time New York Medicine, we begin a series of papers on interesting points in the history of medicine in New York city and State that will be continued at more or less regular intervals during the year. In turning over into the new century medical history leaves behind it in the nineteenth century many interesting details in the development of scientific and practical medicine that it would be too bad to lose sight of entirely. Our predecessors in the profession have been eminently worthy men, the example of whose lives and labors can scarcely fail to be a stimulus and a guide for the present generation of medical men. Their unselfish devotion to their work under trying circumstances, their faithful attention to the scientific side of medicine, where there was little to encourage investigations and research, their evolution of a high spirit of professional honor in conditions that seemed little likely to foster ideals, all must remain as a precious legacy for the future.

The details of their lives must not be allowed to perish then. We have come to a time, however, when unless special attention is called to some of the biographical and bibliographical monuments that mark important passages in the past much precious historical material may be lost because of failure to recognize its true value. It is mainly with the idea then of recalling attention to salient features of New York medical history and their relation to the general history of the city and its great men that we begin the publication of this series of articles. We hope that the interest of the subjects themselves will besides prove ample justification for the brief renewals of the memories of a past that we may all well be proud of. We cannot hope entirely to escape falling into errors of detail. For the correction of these we shall be grateful to correspondents as well as for supplementary details on occasion that may add to the significance of the subject treated.

The series of papers opens very naturally with an article on Dr. John W. Francis, whose book on "Old New York, or Reminiscences of the Past Sixty Years" has been and will ever remain the most fruitful source of material for the medical history of New York city. Dr. Francis was besides one of the most prominent of the early medical journalists in New York city. In connection with Dr. Hosack, his preceptor, he took part in the editing of the *American Medical and Philosophical Register*, a journal of medicine and science, while still a medical student. In 1822, with Drs. Beck and Dyckman, he helped in the editorial management of *The New York Medical and Surgical Journal*. He was the contributor on American topics to Dr. Brewster's (of Edinburgh) Cyclopedia. The first graduate of the New York College of Physicians and Surgeons, the second president of the New York Academy of Medicine and a typical old-time practitioner of medicine who won the enduring respect of his colleges, Dr. Francis may well be taken as the type of the honorably successful medical men of the first half of the nineteenth century. For the intimate relations he enjoyed with all his noteworthy English and American contemporaries we must refer our readers to the sketch of him in this number.

THE MASTER OF THOSE WHO KNOW.

On December 9, 1852, a certain candidate passed his examinations and became a Fellow of the Royal College of Surgeons. He hailed from Essex and his name was Joseph Lister. For the men who have graduated in medicine and surgery since the thorough establishment of the revolutionary changes introduced by this same Joseph Lister, there is no better or more instructive reading than the Jubilee number of the *British Medical Journal* (Dec. 13, 1902).

It is difficult to gather from that most interesting issue the best, because there is nothing in it which does not belong in this category and it is impossible to allow such a publication to pass without pausing to praise it.

In his introduction to the Bradshaw lectures, Howard Marsh, speaking of the poet Gray, said that "he alluded in trenchant phrases to those who shut the gates of mercy on mankind, whereas "Lord Lister has done more than any living man to throw them open." "Always too busy in his own great work to seek for recognition, his cup became full, and a few months ago he stood by and saw his principles turned to account by Sir Frederick Treves, who averted the imminent peril which beset England's King."

The original contributions in the number are from men of prominence from the whole continent of Europe. Professor Ernest Von Bergmann, of the University of Berlin, in contributing the leading article says that without the principles of Lister his own work, so fundamental and so authoritative, on excision of the tongue and larynx, could never have been thought of, much less perfected.

Dr. Lucas-Championiere, surgeon to the Hotel Dieu, Paris, said that Lister was a direct follower of Pasteur and that like Pasteur he had been fortunate in living long enough to see the glorious outcome of his marvelous work. Lister gave a scientific basis to surgery. He placed it on established truths. He swept away that uncertainty in which the greatest surgeons up to that time had left it. He was inspired by the work of Pasteur, but the wonderful edifice which he created was purely his own. Modern surgery and medicine could no more exist without Lister to apply the ideals of Pasteur than a modern great building could be erected without the practical architect and construction engineer.

From Italy, Francesco Durante, Director of the Surgical Clinic at the University of Rome, contributes observations on Cerebral Localizations in which he concludes with a glowing tribute to Lister.

From Denmark Oscar Bloch, professor of Clinical Surgery in the University of Copenhagen, writes that he could illustrate to his class the wonderful achievements of surgery and their absolute dependence upon Listerism in no better way than by showing a case of compound fracture. "Think, gentlemen," says this eloquent Dane, "not of the countless human lives which the great master has saved not of the amount of suffering which he abrogated, because such thoughts are beyond your ken. I ask you to consider only subjects within your grasp. Picture, if possible, the number of arms and legs which have been saved by the application of his principles. Prior to Lister, two-thirds of all compound fractures were fatal. Indeed, so generally was this recognized that the invariable rule was to amputate at once. This would have created a pauper in the case of the man whose arm I have just shown you."

From Breslau, Von Mikulicz-Radecki writes: "I have been asked to contribute words in honor of Lord Lister. Where should I begin and where end? The whole development of surgery is one long hymn in his honor and no page of modern surgery can exist without reference to him. He who would worthily celebrate Lister must consider gynecology, obstetrics, pathological anatomy, and bacteriology, in short all of medicine as well as surgery. When in the year 1875 I became assistant to Billroth, the open treatments of wounds still prevailed at his hospital. In the morning an operation was practised upon the cadaver,—in the afternoon upon a living person on the same table. The same sponges, the same instruments, the same hands, all unwashed were used for both purposes. Truly the hands were washed well after the operation, but before, it was considered a superfluous luxury."

Not the least charming among these various contributions is one by Thomas Annandale, professor of Clinical Surgery, Edinburgh University, who writes with delightful simplicity of the early days in Edinburgh. It was here that under the stimulus of his devoted friend and father-in-law, Professor Syme (see London Letter, Dec. 13, Medical News), who among all the great surgeons of the day was the only one to recognize the value of Lister's efforts, the young assistant was given the encouragement necessary to carry on his work. It must not be forgotten nor lost sight of in discussing the great work of Lister that his wonderful mind and marvelous genius were brought to bear in unraveling many minor problems. Unfortunately very little of his purely surgical work has been published, but Sir Hector Cameron ascribes to him the priority in clearing out the axilla in operations for carcinoma of the breasts. He it was too who first wired the fractured patella, incised and drained psoas abscesses, blood cysts and housemaid's knee, and to him we are also indebted for the revival of the operation of suprapubic cystotomy. These things in themselves would have made many men famous but were looked upon by Lister merely as the natural outcome of the application of his principles.

In military surgery we have but to view the reports of our own Nancrede and Senn of the Hispano-American War to see how profound has been the change. In 1864 every invaded knee called for immediate amputation; every opened hip proved fatal. How different it is to-day! Lister's methods have the simplicity which so often characterizes great inventions and great characters. Most of the discoveries that experimental physiology has achieved are absolutely traceable to Lister's work. What, without him, should we know of the offices of the liver and the process of urea formation in the body,—of the secretory innervation of the stomach,—of the balanced relation between various food stuffs and the character and quantity of the digestive juices they excite, of the degree of efficacy of the supplanting of one nerve by another, of the indispensable importance of the pancreas to the body's chemical processes, of the phenomena environing the action of the ductless glands.

Lister, the man, was not less than Lister the scientist. No teacher probably exerted such an influence for good upon his pupils. They revered him for his incomparable achievements, for his zeal, for his exactness, for his knowledge, for his power of work, but his earnestness of purpose, his love of truth and his self-sacrifice made an indelible impression on all. For what he has done and for what he is, the world honors Lord Lister more than all its warriors, all its statesmen, its historians and benefactors. Well might this grand old man say with justifiable pride, "*Quae regio in terris nostri non plena laboris.*"

ECHOES AND NEWS.

NEW YORK.

New Clinic at the Polyclinic.—The New York Polyclinic Medical School and Hospital has established a night clinic for Genito-Urinary Diseases on Monday and Thursday evenings at 8 P. M.

Appointment of Dr. Calkins.—Dr. Gary N. Calkins of the department of zoology of Columbia University has just been appointed consulting biologist to the New York State Pathological Hospital. Dr. Calkins will continue with his university work as well.

Expert Anesthetists Appointed for Bellevue and Allied Hospitals.—Dr. Myron P. Denton and Dr. George M. Creevey have been appointed to Bellevue and Dr. Samuel J. Kopetzky to Harlem hospitals as expert anesthetists. The Board of Trustees has made this important departure in order to ensure the administration of anesthetics in the most approved manner, as well as to provide for the practical instruction of the incoming members of the house-staff in the selection of anesthetics for individual cases, and the best methods of administration. As soon as qualified anesthetists are secured appointments will be made to Gouverneur and Fordham hospitals.

The New York Obstetrical Society.—The following resolution was passed at the meeting of the New York Obstetrical Society held Dec. 9, 1902: Resolved: That by the death of Dr. John Byrne, our oldest Honorary Fellow, the members of this Society have lost a beloved associate, whom we esteemed as an eminent surgeon, a wise counselor and a faithful friend.

Charles Jewett, M.D., Henry C. Coe, M.D., *Committee.*

Hygiene at Teachers' College.—The faculty of Teachers' College has decided to give instruction in hygiene next year by providing twenty distinct courses in physical education. Among the subjects to be taught are child study, school psychology, physiology, bacteriology, gymnastics, physical education, the theory and practice of teaching physical education in secondary schools, anthropometry and the history of physical education. The instruction is to be given in the new $250,000 gymnasium now being erected in One Hundred and Twentieth street near Broadway. This, besides serving the purposes of a gymnasium, will contain physical laboratories and appliances for physical education. Dr. Thomas Denison Wood will have charge of this new departure in the university's work.

The New Medical Library and Historical Journal.—On January 15 a new medical journal with the above title will be published, "Devoted to the Interests of Medical Libraries, Bibliography, History and Biography." It is designed to fill a place occupied by no other journal, and will be the only magazine published in the English language devoted to the subject of medical history. Original articles will embrace the subjects of medical history and biography, practical medical library administration and economy, medical bibliography, the care of books, the history, construction and use of medical libraries, etc. A bibliographical feature will be the publication of a complete index medicus of every current medical book, both English and foreign. The contributors to the first number are: Lewis S. Pilcher, M.D., LL.D., Editor of the *Annals of Surgery*; Eugene F. Cordell, M.D., of Baltimore; Frederick P. Henry, M.D., of Philadelphia; James M. Winfield, M.D., of Brooklyn, and others. Published quarterly, the yearly subscription is $2.00. All communications should be addressed: Medical Library and Historical Journal, 1313 Bedford Avenue, Brooklyn, New York.

PHILADELPHIA.

Philadelphia Hospital Staff.—The Board of Charities has elected for another year the entire staff of the Philadelphia Hospital. The staff was also increased by the appointment of Dr. Randle C. Rosenberger as an additional bacteriologist. Dr. William C. Pickett, formerly a registrar, was made an examiner of the insane.

Lectures by Army Surgeon.—Arrangements have been made with Surgeon-General O'Reilly to have Captain Charles F. Kieffer, surgeon in the U. S. Army, deliver eight lectures at the Jefferson Hospital on tropical hygiene, with a general consideration of purely tropical diseases. The lectures will be delivered to the members of the senior class from one to two o'clock on Fridays, beginning January 9.

Captain Kieffer has until recently been stationed in the Philippine islands.

Coroner's Work During 1902.—The records of the coroner's office show that eleven more inquests were held in 1902 than during the preceding year, the total being 2,804. Investigation of 3,709 sudden, violent, or accidental deaths was made but in 905 an inquest was deemed unnecessary. The deaths from heat were only 6, as against 144 the preceding year. Suicides numbered 203. Of these, 138 were males and 61 females. Five were colored persons. During the year the coroner's physician held 751 autopsies.

Low Death Rate for 1902.—Statistics of the Registration Division of the Bureau of Health for 1902, which have just been compiled, show a mortality ratio of 17.67 per 1,000 of estimated population. This rate is the lowest attained since 1879 when the death rate was 17.17 per 1,000 persons. Taking into account was the prevalence of smallpox and typhoid fever, this rate is considered to be a good showing. Director of Public Safety English attributes this result to the very thorough manner in which the several smallpox centers, as well as the public, private, and parochial schools, were disinfected. The low death rate reflects credit upon the sanitary methods adopted. The principal causes from which death resulted are: Consumption, 2,845; inflammation of the lungs, 2,976; diseases of the heart, 1,681; diphtheria, 435; scarlet fever, 143; smallpox, 231.

Municipal Hospital Bill Signed by the Mayor.—Mayor Ashbridge has signed the bill authorizing the removal of the Municipal Hospital from its present location in the Twenty-eighth Ward to the new Macalester site in the Twenty-third Ward. The reasons given are that the present buildings and grounds are entirely unsuited to the treatment of smallpox and other contagious diseases by modern methods. He states that "The fears of the people in the Twenty-eighth Ward and of those in the Thirty-third Ward did not enter into the consideration of the matter, as I share the opinion of all specialists the world over that a hospital for contagious diseases is no menace to a neighborhood under modern methods and conditions." Notwithstanding this, the residents of the new locality have engaged counsel and will make a determined fight against the building of the hospital in that ward.

Diagnosis of Intestinal Injury Following Abdominal Contusion.—Dr. Robert G. Le Conte selected the above subject for the Annual Address in Surgery which he delivered before the Philadelphia Academy of Surgery January 5. The address was based on personal observation of 30 to 35 cases. The speaker said that when there was external opening of the abdomen following injury, the indications for operation were clear. When no such opening exists it is often difficult to decide upon the course of treatment to pursue. There is in such cases no pathognomonic symptoms of injury to the intestinal tract. The subject is to be considered from the standpoint that the operative mortality of abdominal injuries is between 50 and 60 per cent. The stomach and intestines may be injured in one of four ways: (1) crushed; this may involve all the coats or only the mucosa, the latter possibly resulting in an ulcer as in cases of traumatic ulcer of the stomach or traumatic appendicitis; (2) bursted; this is not a common lesion, Dr. Le Conte never having seen an instance of such injury; (3) torn; (4) killed by cutting off of the blood supply. The rapidity of the onset of symptoms depends on three things: (*a*) the amount of food in the injured viscus; (*b*) the part of the alimentary tract ruptured; (*c*) the coat or coats of the tract that are involved.

Subjective and Objective Symptoms of Intestinal Injury.—Very little can be diagnosticated from shock alone. Trivial injuries may produce profound shock and severe injuries but very little shock. The rapidity with which reaction from shock occurs is not a sure guide but a secondary fall of temperature below the normal soon after the rise is a bad sign. A steadily increasing pulse is a serious symptom but must be accompanied by others to be alarming. Increased, shallow, thoracic breathing is of diagnostic value. The facial expression of the patient, especially if the "abdominal facies" be present, is a most valuable sign. The expression referred to probably comes on with peritoneal involvement. Pain, when deep and radiating, is of marked significance. Tympany is usually present for a comparatively short time when there is no severe injury and is probably caused by temporary paresis of the intestine. When it is extensive, progressively increases, or appears late it is a grave symptom. The absence of liver dulness is a most unsatisfactory sign. Dr. Le Conte has found dulness absolutely absent when there was no gas in the abdominal cavity. He has never been able to give a definite value to this sign. Vomiting immediately after injury has no significance but later on is of importance. Concerning leukocytosis, so many other factors besides the actual injury may cause it that it is not of much value early in the case. In connection with the latter perforation it assumes a new significance.

When Shall One Operate in Abdominal Contusion?—Dr. Le Conte's conclusions are briefly as follows: (1) A moderately assured diagnosis of intestinal injury should be made before operation is resorted to. If this is not done, the surgeon will open the abdomen in many cases only to find that the trauma is confined to the abdominal wall. Hypothetically, 30 to 40 cases of each 100 admitted to general hospitals need operation but this does not mean that the surgeon should operate immediately in all. It is better to wait, in many instances, for symptoms indicative of intestinal injury. (2) In the presence of shock one cannot diagnose intestinal injury, neither is primary shock an aid to diagnosis. Hence the surgeon should wait for reaction. (3) Gradually increasing rigidity and the facial expression (impossible to describe) referred to, are two of the most important symptoms suggesting operative interference. (4) A position midway between that of operating upon every case at once and that of waiting until an absolutely positive diagnosis can be made, is the proper one to take. (5) Only extended experience in observing cases can give that refinement in diagnosis which will enable one to decide upon the proper course to pursue in these cases.

Philadelphia's Charities.—The "Directory of Charities" that the Civic Club of Philadelphia is about to publish will go far toward proving that the people of this city give more in actual charity per capita than those of any other city in the world. Among the charitable organizations the Philadelphia Society for Organizing Charity has first place. The general secretary, as well as nearly all the office force and a large proportion of the outside force, is a woman. The society has divided the city into 16 districts over each of which a superintendent is placed. Under the head of "Relief in Sickness" the directory will name 23 institutions that send out ambulances for patients upon call; 7 with diet departments or kitchens; 33 that send nurses to the sick at their homes; 23 have "fresh air funds," or free dispensaries, or hospital annexes by the sea or in cool upland valleys for the treatment of summer patients; 43 have public dispensaries; there are 9 hospitals for little children; 51 associations maintain hospitals for women alone, two for men exclusively, 29 for men, women, and children; medical aid at home is rendered by 7 institutions; there are two "shut in" societies, 61 homes and refuges for adults, four poor houses, 16 societies for the benefit of children, particularly orphans; 22 day nurseries, and 58 "homes" for children. For the relief of special classes of persons there are 41 establishments and for relief not thus restricted there are 125. Societies for gratuitously obtaining employment for the poor number 80. It is estimated that at least 200,000 persons in Philadelphia annually receive relief.

CHICAGO.

State Hospitals for Consumptives.—In its biennial report, just submitted to Governor Yates, the State Board of Health emphasizes the necessity for the immediate construction of a State sanatorium for consumptives, not only as a means of cure of such patients as are sent to it in the early stages of the disease, but to prevent the spread of the disease in the State. Of the 5,000,000 inhabitants of Illinois, the report estimates that over 700,000 are doomed to die of some form of tuberculosis unless steps are taken to stop the ravages of the disease. The report continues: "Tuberculosis is an infectious disease, and causes one-seventh of all deaths. Over 8,500 persons die from it annually in Illinois. While there is no disease that causes so much disaster in the human family, there is none more easily prevented. Patients suffering from tuberculosis cannot be properly cared for at their homes; general hospitals are ill-adapted for their treatment, and since tuberculosis has been recognized as a communicable disease, the doors of nearly all hospitals, public and private, have been closed to them. The treatment of consumptives requires segregation in properly constructed hospitals. The importance of special climate, altitude and atmosphere in the treatment of consumptives has been greatly over-estimated. The treatment and cure of the disease is as feasible in Illinois as in any other State, and cures effected in the home climate, in which the patients must remain, are more lasting than cures in other climates." The Board points out that it is impracticable for a city or county to maintain a hospital for consumptives, and insists that it is the State's duty to establish such an institution, and thereby save the lives of thousands of its citizens.

State Board of Examiners.—The Board recommends the passage of a law creating a State Board of Examiners, which would leave the State Board of Health free to perform sanitary work alone.

New Cook County Hospital Staff.—Attending and associate physicians and surgeons for the Cook County Hospital were recently appointed, and the appointments approved at a special meeting of the County Board. The appointments made were as follows: Surgeons—Dr. Nicholas Senn, Dr. J. B. Murphy, Dr. William Hessert, Dr. William E. Schroeder, Dr. Thomas A. Davis, Dr. F. S. Hartman, Dr. C. F. Swan, Dr. A. I. Bouffleur, Dr. J. W. Tope, Dr. Aime P. Heineck, Dr. D. N. Eisendrath, Dr. O. W. McKellar, Dr. Frank R. Byrnes, Dr. A. E. Halstead. Dr. J. P. Webster, Dr. Charles Davison, Dr. P. S. Doane, Dr. L. L. Gregory, Dr. C. E. Humiston, Dr. F. Kreissl, Dr. Mary J. Kearsley, Dr. Edward H. Lee, Dr. Paul O. Owsley, Dr. C. C. O'Byrne, Dr. Lawrence Ryan, Dr. Charles J. Rowan, Dr. F. R. Sherwood, Dr. G. T. Thompson, Dr. Daniel H. Williams, and Dr. Arthur E. Price.

Physicians—Dr. Frank Billings, Dr. W. S. Harpole, Dr. W. E. Quine, Dr. E. F. Ingals, Dr. F. Tice, Dr. R. B. Preble, Dr. Joseph L. Miller, Dr. James B. Herrick, Dr. M. L. Goodkind, Dr. A. R. Edwards, Dr. R. H. Babcock, Dr. A. H. Brumbach, Dr. Stanton A. Frieberg, Dr. George W. Hall, Dr. R. L. James, Dr. C. L. Mix, Dr. S. R. Slaymaker, Dr. Theodore B. Sachs, Dr. B. W. Sippy, and Dr. Edward F. Wells.

Children's department—Dr. I. A. Abt, Dr. William J. Butler, Dr. F. S. Churchill, Dr. Robert H. Harvey, and Dr. Josephine Jackson.

Contagious diseases—Dr. W. L. Baum.

Neurologists—Dr. Daniel R. Brower, Dr. Sanger Brown, and Dr. Sydney Kuh.

Eye and Ear—Dr. P. J. H. Farrell, Dr. Allen T. Haight, Dr. Willis O. Nance, Dr. C. C. Young, and Dr. E. F. Snydacker.

Tuberculosis and laryngologists—The Rev. John Edwin Rhodes and Dr. Homer M. Thomas.

Obstetricians—Joseph B. De Lee, Dr. Frank B. Earle, Dr. Charles B. Reed, and Dr. Rachelle S. Yarros.

Gynecologists—Dr. L. M. Baldwin, Dr. E. A. Fischkin, and Dr. L. E. Schmidt.

Pathologists—Dr. E. R. Le Count and Dr. W. A. Evans; Resident pathologist—Dr. F. G. Harris.

Orthopedic—Dr. John R. Porter.

Dentist—Dr. Hart J. Goslee.

Associate Staff—Surgical—Dr. John Leeming, Dr. L. Hektoen, Dr. Bertha Van Hoesen, Dr. C. P. Stringfield, Dr. Victor S. Frankenstein, Dr. U. G. Windell, Dr. P. H. Conley, Dr. Svenning Dahl, Dr. James Alexander Harvey, Dr. D. R. McMartin, Dr. Thomas A. Olney, Dr. James M. Neff, and Dr. Samuel L. Weber.

Eye and Ear—Dr. G. F. Hawley.

Proctologist—Dr. J. Rawson Pennington.

Dermatologists—Dr. R. R. Campbell, Dr. William A. Quinn, and Dr. J. L. Wells.

Medical—Dr. Oscar A. King, Dr. Charles A. Lodor, Dr. Groesbeck Walsh, Dr. Charles Spencer Williamson, Dr. James Moreau Brown, Dr. Arthur M. Brianza, Dr. E. F. Buecking, Dr. J. Z. Bergeron, Dr. Lorin C. Collins, Dr. Arthur M. Corwin, Dr. Ellis Kirk Keer, Dr. Julia Ross Low, Dr. E. A. Lyon, Dr. Frank R. Morton, Dr. F. S. Selby, Dr. Harry Gideon Wells, Dr. Twing Brooks Wiggin, Dr. Ernest L. McEwen, and Dr. H. S. Warren.

Contagious diseases—Dr. Rosa Engelmann.

CANADA.

Montreal General Hospital.—The December report for the Montreal General Hospital shows that the admissions into that institution during December were 241 and the discharges 245. The average daily sick in residence was 192. The admissions to the out-door departments numbered 2,556. The deaths numbered 19.

The Smallpox Situation in Ontario.—Dr. P. H. Bryce, secretary of the Ontario Board of Health, received notification on Jan. 3 of outbreaks of smallpox in three different sections of Ontario, as follows: At Galt, in Waterloo county, where there were several cases; at Thamesville, in Kent county, and on the Deseronto Indian Reserve in the eastern part of the province. The day previous Dr. Bryce had issued a statement to the effect that the outlook for the province as regarded smallpox was much brighter than a year ago. In Dec., 1901, there were 250 new cases reported in the province. In Dec., 1902 only 86 cases were reported and nearly all of these were in two centers, one of which is now practically cleared up. During 1902 there were in Ontario 2,500 cases. Fifteen deaths occurred in that year. During 1901 there were 1,838 cases with seven deaths. In 1900 there were eleven deaths. In 1899 there were seven deaths.

St. Michael's Hospital, Toronto to Have a New Wing.—The authorities of St. Michael's Hospital, Toronto, have just completed the purchase of two lots adjoining the hospital buildings and will use for the present the houses on them for the purposes of a maternity ward. Later on a new building will be erected connecting the new maternity ward with the hospital proper. There are now 150 patients in this hospital.

Obituaries.—Dr. C. W. Hopkins, medical superintendent of the Maternity Hospital, Montreal, died in that city the latter part of December of typhoid fever. He was a member of the graduating class of the medical faculty of McGill University of last year and was considered to be one of the best all round students which had ever been graduated from that famous institution, having taken first class honors in almost every subject throughout his entire course.

Dr. Colin McPhail, Summerside, Prince Edward Island, vice-president of the Canadian Medical Association for that province and treasurer of the Maritime Medical Association, died suddenly of apoplexy on Dec. 3. Dr. McPhail, who was in his fortieth year and considered to be one of the leading practitioners of the Island province, was a graduate of Trinity Medical College, Toronto, and subsequently took a post-graduate course at Edinburgh.

Dr. Archibald Young Scott, Toronto, died Jan. 3 from myocarditis following an attack of typhoid fever through which he passed two years ago. The late Dr. Scott was born in Ontario in 1861. Entering Toronto University, he was graduated B.A. in natural science in 1882. He studied medicine at Trinity Medical College and received his medical degree from Trinity University in 1887. In 1891 he was appointed professor of botany and chemistry at the Ontario College of Pharmacy, Toronto, a position which he held up to the time of his death. Dr. Scott was prominent in military circles, had seen active service with the Toronto University regiment in the Northwest Rebellion in 1885 and when the Army Medical Service was organized a few years ago, he was gazetted Major of No. 4 Field Hospital Company.

Dr. A. C. McDonnell, one of the oldest practitioners of the city of Montreal, died suddenly on Jan. 2, at the age of seventy-four years. He was a graduate of Toronto University and was for over 20 years on the consulting staff of the Hotel Dieu Hospital, Montreal.

GENERAL.

Another Sicilian Journal.—The first fasciculus of a new Sicilian monthly journal of obstetrics and gynecology, under the direction of Prof. Consentino has just been published.

A New Journal of Pediatrics.—A journal, entitled *Rivista di Clinica Pediatrica,* will shortly be published under the direction of the Italian pediatrists Mya and Concetti.

The Russische medicinische Rundschau.—This is the title of a new journal published in Berlin that is to collect and disseminate the best of Russian medical literature; thus making the research done in Russia more widely known to the scientific world. It is to be published monthly. The price is $4.00, and the publisher, Max Hirsch, Berlin.

Malaria and Carcinoma.—A case of epithelioma of the lower lip of two years duration which healed entirely during an attack of malaria, only to recur shortly after the subsidence of that disease is reported by Dr. Portanova da Colle d'Anchise (Campobasso).

Hospital for Lepers in Paris.—It is proposed to erect a hospital for this class of sufferers, in Paris, of whom there is said to be 19, chiefly from the colonies. An appropriation of 25,000 francs has been asked for this purpose.

Pertussis Serum.—From Brussels comes the announcement of the discovery by Camillo Leuriaux of such a serum, the injection of which is said to have been attended with excellent results; a cure being effected within eight to ten days provided the treatment be given sufficiently early in the disease.

Hospital Burned.—The Atchison, Topeka and Santa Fé hospital has been burned. Dr. J. B. Cutter, the physician in charge, and his assistants worked heroically in getting out the 200 patients.

Gift to an Orange Hospital.—A fully equipped bacteriological and pathological laboratory has been presented to the Orange Memorial Hospital by Dr. William B. Graves of East Orange. It will be known as the Graves Laboratory. A large room has been set apart in the dispensary building and it will be at the disposal of private physicians as well as the hospital. The new laboratory will save considerable delay, as at present it is necessary to send cultures and specimens either to New York or to Princeton.

The New Index Medicus.—The Index Medicus was established in 1879, under the editorship of Drs. John S. Billings and Robert Fletcher, and was discontinued in 1899. The present publication, which is undertaken by the Carnegie Institution, will be known as Index Medicus, Second Series, Volume I commencing in January, 1903. It consists of the titles in full of books, pamphlets, theses, contributions to cooperative works and original articles in journals, transactions of medical and scientific societies, and the like, arranged under subject-headings. It is issued as early as possible after the first day of the month, time being allowed for the arrival of foreign journals, and it represents the literature of the preceding month. A table of contents accompanies each number, and on the completion of the volume an "Annual Index of Authors and Subjects" is issued. The subject part of this annual index is elaborately subdivided, the classification closely resembling that of the Index Catalogue of the Library of the Surgeon-General's Office. The annual index of the last volume of the first series occupies 156 pages in double and triple columns. The titles in certain languages, as Russian, Polish, Swedish, Danish, Finnish, Hungarian, Bohemian, Roumanian, and Japanese, are translated into English. The editor, while indexing all really original matter, does not admit "reports of progress" or include all copies of an article which may appear in other journals. Translations are admitted when in languages more familiar than the originals. The Index Medicus publishes no advertisements and does not exchange copies with other journals. The classification by subjects which will be adopted in the monthly numbers will closely follow that which use made familiar to the readers of the first series, but with such additions and modifications as advances in medical knowledge may require. Robert Fletcher, M.D., Editor-in-Chief.

Baltimore Infectious Disease Hospital.—Monday last saw a final adjustment of the difficulty which the Municipal Health Committee had in deciding upon a site for an infectious hospital. The danger Baltimore has been exposed to owing to the lack of an infectious and isolation hospital seems about to be overcome. The opposition made by the influential citizens to the purchasing of a piece of property near the northwestern suburbs, has been at last compromised by abandoning that site and determining upon the selection of a large area in the southeastern suburbs, close to the Bay View Asylum Hospital. This property is so large that there will also be constructed a fine modern hospital for tuberculosis. This new hospital for tuberculosis will be built according to the most modern methods with plenty of sunlight and ventilation. The plans for this and the infectious disease hospital are now being discussed by the Health Commission.

College of Physicians and Surgeons of Baltimore.—A meeting was held Sunday afternoon by members of the Faculty of the College of Physicians and Surgeons to arrange the program for a course of post-graduate studies to be repeated this spring and summer. The Post-Graduate Course was first inaugurated last year under the direction of Prof. Harry Friedenwald. It was so successful that it will probably be given henceforth every spring. The number of physicians attending each course will be limited, thus enhancing the value of the practical side of the work. The courses to be given will be Medicine, Surgery, Nervous Diseases, Genito-Urinary Diseases, Pediatrics, Dermatology, Physical Diagnosis, Clinical Microscopy, Bacteriology and Pathology. It will again be directed by Dr. Harry Friedenwald, assisted by Dr. John Ruhräh, Dr. Harvey Beck, Dr. Charles Bevan, Dr. G. J. Preston, Dr. Leonard K. Hirshberg, Dr. J. Hall Pleasants, Dr. Julius Friedenwald, and Dr. Melvin Rosenthal.

Medal for Baltimore Board of Health.—The Baltimore City Health Department has just received a handsome bronze medal awarded to it by the Paris Exposition for the finest exhibit among the local boards of health for sanitation and hygiene.

Dr. Walter Reed Honored.—Under the auspices of the Medical Society of the District of Columbia memorial services were held in the Law Building of the Georgetown University this evening in honor of Major Walter Reed, United States Army, who died recently in this city. Many distinguished physicians and laboratory investigators who had come to Washington to attend the convention of the American Association for the Advancement of Science were present. Gen. Leonard Wood paid a glowing tribute to the work of Dr. Reed in Cuba and told how he practically exterminated yellow fever in the island. "The actual saving of life through Dr. Reed," he said, "has exceeded the number of lives lost in the war with Spain. The saving in money exceeded the cost of that war. Dr. Reed's yellow-fever discoveries were the greatest since the discovery of vaccination."

Dr. W. H. Welch, of Baltimore, in whose laboratory Dr. Reed worked 10 years ago, said Dr. Reed was "the greatest productive pathological investigator of the generation in this hemisphere. He belonged to the few who were really original discoverers of science. He solved the problem which had baffled all predecessors. His fame will be imperishable when finally recognized, because he discovered the way to eradicate one of the most radical of pestilences. The general public does not appreciate the fact. If he had invented some great engine of war his fame would be international. But the discovery of something to save instead of destroy human life does not make the same impression on the imagination." Dr. Welch referred to the fact that Dr. Reed died leaving his family without any income other than would come to them from a pension of $25 a month. "It is the plain duty," said Dr. Welch, "of the national government to make ample provision for the support of Dr. Reed's family." Others who spoke were Dr. Robert M. Marmion, medical director, United States Navy; Dr. Jefferson R. Kean, Dr. A. F. A. King and Dr. Charles W. Stiles, zoologist of the Marine Hospital Service.

For Medical Research.—During the annual meeting of the American Society of Naturalists in the main lecture hall of the Columbian University of Washington last week Dr. William H. Welch, of the Johns Hopkins University intimated that an important scientific endowment would shortly be made. He stated during a formal discussion of the subject of the most effective way of using educational endowments that, while he was not yet prepared to make the formal public announcement, he could assure those present that within the near future there would be a specially endowed institute or laboratory in this country for research in scientific medicine. The institute would be in a general way similar to the Pasteur Institute of France, and would greatly facilitate and energize special research along lines that would be of incalculable benefit to humanity. After Dr. Welch had referred to the prospect for the establishment of an independent institute of scientific research, some of the members suggested the possibility that the Carnegie Institute had given some assurances of aid in that direction. There were others who declared that since Mr. Rockefeller had made the original endowment under which Dr. Welch and others are working, any provision for an independent institute would come from him. Neither Dr. Welch nor Dr. Gilman, however, would indicate the source of the expected endowment, stating that such announcement would be premature at the present time.

Dr. Welch, in his remarks, reviewed his experience of a year in directing research work under the endowment of $200,000 made by Mr. Rockefeller for the promotion of medical science. He said that the trustees of the fund had been given authority to direct the manner in which the fund should be used. The trustees at once recognized that the sum donated would not be large enough for the establishment of a separate laboratory. It was therefore decided that it should be distributed among different laboratories already existing. The sum was also insufficient to be applied to all lines of medical research. For that reason it was decided to make special research along the line of infectious diseases and preventive medicine. He proceeded then to tell about the work which resulted in the discovery of the germ of summer complaint and the cause of acute dysentery. He stated that the work of research had continued and that in connection with the malady of diarrhea, which was now being studied, special field and laboratory work would be undertaken during the coming summer.

Dr. Welch said the Rockefeller fund trustees had distributed portions of the endowment in the form of scholarships, and in that way obtained praiseworthy investigation. Papers had been received from scientific workers in laboratories all over the country. The trustees had also aided promising young men who had been sent to laboratories in this country and even abroad for special investigation. The work of some of these young men in European laboratories had not only been of great good to the young men themselves, but to American science and the public. He asserted that while a great deal had been accomplished much more could be done with a separate institute or independent laboratory with a competent man at the head of it, similar to the Pasteur Institute in France, the Institute for the Study of Infectious Disease at Berlin and the institute at St. Petersburg.

Changes in the Medical Corps of the Navy, Week Ending December 27.—Medical Inspector D. N. Bertolette, ordered to duty as Fleet Surgeon of the Pacific Station. Medical Inspector E. H. Green, detached from duty as Fleet Surgeon, Pacific Station, and ordered to the Wisconsin.

Changes of the Medical Corps of the Navy, Week ending January 3.—Asst. Surgeon J. M. Brister, detached from the Frolic and ordered to the El Cano. Asst. Surgeon U. R. Webb, detached from the Iris and ordered to the Naval Station, Cavite, P. I. Asst. Surgeon H. A. Dunn, detached from the Vicksburg and ordered to the Frolic. P.A. Surgeon C. A. Crawford, detached from recruiting duty and ordered home to wait orders. P.A. Surgeon G. L. Angeny, detached from the Lancaster and ordered to the Essex. Asst. Surgeon R. W. Plummer, detached from the Naval Hospital, Chelsea, Mass., and ordered to duty at Chattanooga, Tenn. Asst. Surgeon G. F. Freeman, detached from the Essex and ordered to duty at Naval Hospital, Chelsea, Mass. Asst. Surgeon W. H. Ulsh, Dec. 22, 1902, retired from active service by reason of disabilities incurred in the line of duty. P.A. Surgeon H. C. Curl, ordered to the Naval Hospital, Mare Island, Cal., for treatment.

Obituary.—Dr. Julius Kohl, one of the widest known physicians in Illinois, who also has had a world-wide acquaintance, died at his home in Belleville, Ill., last week of cancer of the stomach. He was United States delegate to the National Congress of Physicians at St. Petersburg in 1900, and delegate to the American Tuberculosis Congress at New York in 1902.

SPECIAL ARTICLE.

EXCURSIONS IN OLD NEW YORK MEDICINE. I.

IT IS proposed to give a series of abstracts and certain interesting details of old-time medical history in New York City that will renew the memory of many medical events and men with regard to whom the present generation should not be without certain definite knowledge. There could be no better subject to begin a series of articles of this kind than a sketch of the career of Dr. John W. Francis, the second president of the New York Academy of Medicine. His book on "Old New York, or Reminiscences of the Past Sixty Years," while only the development of a discourse delivered before the New York Historical Society, and published by W. J. Widdleton, New York, 1866, is a mine of information for those who are interested in personal details of New York City history and of the great men who have lived within its limits during the first half of the nineteenth century.

There are other reasons why Dr. Francis should be chosen as the first subject in Excursions in Old New York Medicine, for he was particularly interested in medical journalism. During his student life he established the *American Medical and Philosophical Register,* which remained for four years a valuable repertory of science and biography. In 1822 in conjunction with Drs. Beck and Dyckman, he edited the *New York Medical and Surgical Journal.* He was besides the contributor on American topics to Brewster's Cyclopedia, published in Edinburgh. His biographer says he was the first individual to receive a degree from the New York College of Physicians and Surgeons.

JOHN W. FRANCIS, M.D., LL.D.

Dr. Francis was born in the year of Washington's inauguration as first President of the United States, the inauguration which, it will be remembered, took place in New York, 1789. He died in 1861, the first year of the Civil War, and his life, therefore, of seventy-two years, extends over an extremely important part of the history of the country. His biographer says of him, without any exaggeration, that few American citizens, unconnected officially with public affairs, were more identified through sympathy and intelligence with the development of our country during this important period than Dr. Francis. In some respects he stood alone and represented a social interest and a phase of American character of which few types remain.

The genial doctor was fortunately one of those men who combine scientific attainments and practical skill in his profession with broad, deep interests in literature and in the movements of human affairs generally. He came at a time when the pursuit of letters was not considered a very honorable avocation by many practical Americans deeply intent on making their fortunes. The son of one of his neighbors, it is said, had written a book of travel and Dr. Francis made it the occasion to warmly congratulate the father who, being a practical and prosaic business man, was annoyed at what he deemed a waste of time and regarding authors as a visionary and unprofitable race, responded rather gruffly to the well-meant compliments.

It is not likely that he ever forgot Dr. Francis' reply. "Sir," said the impatient doctor, with Johnsonian emphasis, "you have no appreciation of the glory of literature, and the true worth of brains and of fame. I had rather be a corn on Byron's toe than the possessor of your fortune, if I had to take your soul with it."

It is fortunate that a man of such wide sympathies was able to exert the influence that Dr. Francis did in New York. At the beginning of his career he became, in fact the year after his graduation, a lecturer on the Institutes of Medicine in the College of Physicians and Surgeons. Thence he was called to the Chair of Materia Medica. He felt the inadequacy of his education, however, and visited Europe, where he came in contact with some of the most prominent scientific men of the Old World, including Cuvier, Denon and Gall in Paris, Gregory, Playfair, Bell and Brewster in Edinburgh, and Rees and Abernethy in London. It is said that he was offered a partnership in medical practice by the latter, who was by no means prone to take up with strangers and who must have been thoroughly persuaded of Dr. Francis' attainments. With most of these men Dr. Francis seems to have been on terms of intimate friendship and his relations with them continued for many years.

On his return to New York in 1815 he became Professor of the Institutes of Medicine. In 1817 he accepted the Chair of Medical Jurisprudence, and in 1819 was transferred to the Chair of Obstetrics and Forensic Medicine.

It was the custom in those days for a man to teach many subjects rather than to specialize on one. After a very few years, however, Dr. Francis gave up teaching and confined himself entirely to the pursuit of his profession, especially of obstetrics. He evidently had a special genius for the practice of medicine, for his contemporaries are loud in praise of his tact, his power to reassure patients and his thorough realization of the capacities and limitations of his art. He was a favorite consultant for physicians themselves when they were ill, and after his death many was the kindly word spoken of him by physician patients.

A favorite expression of Dr. Francis, and one that he quoted very frequently to young medical friends, is the passage from Horae Subsecivae, by Dr. John Browne of Edinburgh, the author of "Rab and His Friends," which contains his precious advice to the voung practitioner about to start in medicine.

"Let me tell you, my young doctor friends, that a cheerful face and step and neckcloth and buttonhole and an occasional hearty and kindly joke, a power of executing and setting agoing a good laugh, are valuable stock in our trade not to be despised. The merry heart does good like a medicine. Your pompous man and your selfish man don't laugh much or care for laughter. It discomposes the fixed grandeur of the one and has little room in the heart of the other who is literally self-contained. My Edinburgh readers will recall many excellent jokes of their doctors, Lang Sandie Wood, Dr. Henry Davidson, our Guy Patin and others."

With all his cheerfulness, his readiness to see a joke and his thorough appreciation of the last good story, Dr. Francis was one of the most sympathetic of men. A member of the medical profession on arriving in the city, having an exalted idea of the doctor, was disappointed at the facetiousness which happened to be the only quality Dr. Francis exhibited at their first interview. A few days after, accident carried the stranger into the squalid purlieus of the Five Points, and as he was picking his way "through the reeking crowds of filth" (those who knew the Five Points of even 30 years ago, will appreciate something of the truth of the adjective thus employed), the steps of the professional brother from the country were arrested by the sight of a poor man tearfully carrying a little coffin and Dr. Francis walking bareheaded behind, the only mourner, except its father, for the child he had faithfully attended.

In fact, so charitable was Dr. Francis and so easily touched that he was frequently imposed upon. There is a tradition that it was never safe for him to carry a full purse, its contents would all disappear during the course of the day and it was ever open to a well-told story of want and suffering. At times he even failed to leave enough money to provide carfare for his journey home, and would have to walk across the city, fortunately not as extensive then as now, unless he met some one of the many busdrivers who knew him well and were ready to trust him for the amount of his car fare.

Dr. Francis' medical writings are nearly all of them of thoroughly practical character, called forth by observations in his practice. All of them have the stamp of the mind of a man wise beyond his generation. He published a short treatise "On the Use of Mercury" in 1811, "Some Morbid Anatomy Descriptions," 1814, "Denman's Practice of Midwifery with Notes," 1825, "Letters on Cholera Asphyxia," 1832, "Observations on the Mineral Waters of Avon" and the "Anatomy of Drunkenness," about 1835. In the last book he anticipates a number of conclusions that are supposed to belong more especially to our own time and finds that tendencies to inebriety are the result of a special constitution of the nervous system, quite as much as a consequence of bad habits.

Dr. Francis was an extremely busy professional man. The annual receipts from his practice were for many years more than $15,000. His biographer adds, "considering the fact that at the time he commenced practice, the population of New York was but 68,000 souls, this may well be compared even with the apocryphal sums supposed to be obtained by the practitioners medical of more modern days."

Dr. Francis lived to the age of seventy-two and died an extremely peaceful death. His long years of intense professional occupation did not shorten his career, or lessen his vitality. It would be interesting to go over the list of presidents of the Academy, as we shall, in a subsequent paper of this series, to show how many of them lived long beyond the Psalmist's limit. Dr. Francis' predecessor in the office of president of the New York Academy of Medicine, the venerable John Stearns, who was the Academy's first president, lived to the age of seventy-seven in the active practice of his profession and died then as the result of a dissection wound, inflicted during the making of an autopsy on a case in which he was particularly interested and of which he wished to find out the exact pathological details.

Some idea of how closely Dr. Francis was linked with the great men of his generation may be gathered from the following paragraph of his biography:

"Dr. Francis went to school with Washington Irving, and heard him declaim 'My Voice is still for War'; he dined with the Literary Club in Edinburgh, when Sir Walter Scott let out the secret of his Waverley authorship; he gossiped with the widow of Burns while her memory of Robert was fresh and full; he passed a memorable day with Southey; he welcomed Jeffrey when he landed at the Battery; he heard Tom Moore sing at New York suppers; he chatted over Cooper's early novels at the Bread and Cheese Club with their author; he discussed horticulture with Colden Mitchell, Bartram and Michaux; the brain with Cuvier; politics with Livingstone, Clinton, Clay, Webster, Gallatin and Cobbet; poetry with Aikens and Halleck, Ireland with Emmet, famous people with Gouverneur Morris; journalism with Walsh; history with Sparks; and art with Trumbull, Greenough, Dunlap, Jarvis, Leslie and Crawford and few of the local associations of his foreign travel were reverted to with more pleasure than the hour he passed in Cowper's pew and Boerhaave's garden."

CORRESPONDENCE.

OUR LONDON LETTER.

(From Our Special Correspondent.)

London, December 20, 1902.

A THREATENED INVASION OF INFLUENZA—A GOVERNMENT REPORT ON HOMES FOR INEBRIATES—INSURANCE AGAINST APPENDICITIS—MAJOR ROSS AND THE NOBEL PRIZE.

The British climate seems to be trying to beat its own record as a "quick change" artiste. A week or two ago furs were our only wear; now even the ordinary overcoat is deemed superfluous. The weather is mild and moist, and there is little prospect of the traditional Christmas weather, which is coming to be generally looked upon as a myth. Whether owing to the weather or not, we are threatened with a visitation of influenza. The number of deaths from that insidious malady has for some weeks been creeping up *sensim sine sensu*, as Cicero says; and the amount of sickness from that cause is already considerable. Schools are being broken up prematurely, and distinguished persons of one kind or another are canceling their engagements in consequence of the scourge. The type of the disease is as yet mainly catarrhal, but severe cases are reported in which inflammation of joints and high temperature simulate acute rheumatism. The cases at present are but as single spies, but if we may judge from the experience of previous seasons, they will soon come as battalions.

Dr. Welsh Branthwaite, Government Inspector under the Inebriates Acts, states in his annual report, which has been issued this week as a Blue-book, that at the close of 1901 there were in this country 21 institutions licensed under the Acts. This figure shows an increase of one over the largest previously recorded number of licensed establishments. As the law stands an essential preliminary to admission to an inebriate home is the consent of the patient. This it is very often impossible to obtain and, short of a new Act of Parliament, the difficulty cannot be got over. It is undoubtedly to the disadvantage of the inebriates that this should be so, but personal liberty must be safeguarded before everything. Did not a late Archbishop of Canterbury declare that he would rather see Britain free than sober? It becomes more evident, says Dr. Branthwaite, every year that a very large number of persons who would otherwise be willing to submit to treatment are prevented from so doing by their inability to find means to make even the smallest weekly payments. Accommodation is wanted for the wife of the small shopkeeper, artisan or laborer; the wife of the man who has a family and home to keep together, and who, given the utmost industry and sobriety, has barely sufficient wherewith to do it. Accommodation is wanted for the man himself, and also for men of a better status who have lost their positions without hope of recovering lost ground except by renewed sobriety. Institutions are wanted where patients can be received for treatment, and pay little or nothing. Places of monastic simplicity in construction and surroundings are required, where living is only such as is necessary to support working life, and where industry shall be compulsory, as contributing to the support and maintenance of patients, as well as to the benefit of their health. There are many philanthropic societies who would at any time be willing to start retreats on these lines, but they are blocked by financial considerations; the original outlay needed for suitably launching the institution is too great, and the sources too uncertain from which subsequent income can be guaranteeed for the maintenance of patients. It would appear therefore as if the future development of the voluntary Act mainly depends upon the munificence of private individuals, and it would be well if, for the sake of humanity, the attention of the wealthy could be drawn to the needs of destitute inebriates. Dr. Branthwaite says that he has made inquiries regarding certain of the secret remedies and drug specifics which were from time to time vaunted as cures for inebriety, but he has yet to find one which would bear the test of strict investigation or one whose statistics of "cures" can be supported by trustworthy evidence. There is no royal road to cure, and indeed, he believes that inebriates are very rarely cured in the sense that they acquire a state enabling them to take liquor in strict moderation. An inebriate remains an inebriate for the rest of his life, so long as he touches alcohol in any form. On the other hand, many, both male and female, have been weaned from the habit, and have been taught to live without liquor and to remain without it. As Dr. Johnson said of himself, "they can abstain but they cannot be temperate." Dr. Branthwaite is absolutely opposed to the notion that a female inebriate may be regarded as hopeless. This notion is both cruel and erroneous, and does incalculable harm by instilling into the minds of inebriate women the hopelessness of struggling against their failing, whereas, in his opinion, with equal consideration and treatment, women are every whit as reformable as men, and possibly even more so. Dr. Branthwaite gives the following statistics regarding the admission of patients to inebriate retreats during 1901:

	Admitted under the Acts.	Admitted privately.	Total.
Males . .	111	136	247
Females . .	109	77	186
Totals .	220	213	433

Last spring Lloyd's did good business by insuring against smallpox at the low rate of half-a-crown per cent. Now it is stated in the newspapers that the prevalence of appendicitis has suggested to one of the most prominent firms in Lloyd's that the public might like to insure against that disease. For a premium of one dollar the assured, if he has to undergo an operation for appendicitis, will have all his direct expenses paid up to $1,000, and in the event of his death under or from the operation a total sum of $1,000 will be paid. Although the idea has quite recently been mooted it is said that a large number of people have already availed themselves of this insurance. The premium, it will be noted, is the same percentage as was charged for smallpox. The illness of the King last summer gave a tremendous vogue to appendicitis, and the recent operation on Lady Dudley, the Vice-Queen of Ireland, has given it a fresh stimulus. But is there not a better way than insurance? The following letter appeared in the *Daily Chronicle*, the leading Liberal paper, a few days ago:

"In talking with some of our American cousins the other day upon the prevalence to-day of appendicitis in our country, I was surprised by their inquiry, 'Why don't you do as we do; operate upon the children in infancy? This preventive is getting as common with us as vaccination.' Can we learn anything from them in this matter?"

Doubtless we may learn many things from our American cousins. But the particular lesson the learned Theban, who put the problem above stated before the world, requires to learn before anything else is to understand American humor.

The award of the Nobel Prize for Medicine to Major Ronald Ross has not given unmixed satisfaction to the medical profession of this country. It is pretty generally felt that if anyone here deserves a prize for helping to solve the malaria problem it is Patrick Manson, who gave Ross the idea and guided his researches all through. Manson was the initiator and director; Ross, owing to the accident of his being stationed in a district of India where material for experiment lay close at hand, was able to carry out his instructions. He was an intelligent subordinate, nothing more. His early work was so crude that Lord Lister is reported to have said that his drawings and reports shocked his scientific sense. In one thing, however, Ross has from the first shown himself capable of independent action, and that is in pushing his discoveries. It is marvelous how the newspapers, which are generally by no means well informed as to medical matters, have obtained accurate knowledge of every detail of his work, of his movements and of his intentions. They have even unearthed literary efforts of his which the world had willingly let die, if it ever knew of their existence. We hear of dramas and novels from his pen, one romance entitled "The Spirit of the Storm" being singled out by no less a person than the president of the Aberdeen Young Men's Christian Association for special praise. I confess it does not surprise me to learn that the mosquito-hunting Major has written romances, for he has shown himself able in other directions to bring into play with great effect what Tyndall called "the scientific use of the imagination."

TRANSACTIONS OF FOREIGN SOCIETIES.

German.

HYPERTROPHY OF THE HEART IN KIDNEY DISEASE—ON THE TREATMENT OF HEMIPLEGIA.

OUR scientific and medical brethren in the German Empire have been busily engaged during the past month in their various learned societies in discussing the medical aspect of many urgent topics. The following have most important practical bearing for our readers among the practitioners of medicine:

SENATOR, at the Society of Internal Medicine in Berlin, Nov. 3, 1902, presented a monograph on the subject of Hypertrophy of the Heart in Diseases of the Kidneys, showing, among other things, that, notwithstanding the great progress which has been made in knowledge of diseases of the kidneys through Bright and Traube, the causal and intimate relation between hypertrophy of the heart and diseases of the kidneys has not yet been fully determined. The important point to be settled in this connection is what part of the heart is diseased most frequently and to the highest degree. K. Hirsch has been able, by means of careful weighings, to determine that the most frequently and most severely diseased portion is the left ventricle. The right ventricle, on the other hand, is much more rarely and much less severely diseased, especially hypertrophied. The cause of this hypertrophy is, according to the mechanical theory of Traube and the viscosity theory of Ewald, to be found in the altered chemical conditions which were long ago described by Bright. Very recently Strauss has discovered in the clinic of Senator that the molecular concentration of the blood in simply chronic nephritis is usually normal. In atrophy of the kidney, on the other hand, it is increased, as are also the nitrogenous excrementitious materials. On the other hand, the amount of albumin present in the urine is quite the opposite. The poisonous qualities of the urine are, according to the method of investigation advised by Bouchard, much more increased in atrophic kidney. Senator formulated the old theory of Bright in the following terms: "The increase in the molecular elements of the blood leads to damage upon the blood-vessels and upon the heart, due to irritation. The reason for the rare presence of this increase in the common, chronic nephritis may be found in the higher degree of permeability of the blood-vessels, and to hydrops, which might otherwise be expressed as a safety valve of the organism. In this affection, therefore, there is rarely hypertrophy of the heart present. In the presence of a sufficiently long persistence of life ,the walls of the blood-vessels thicken and narrow on account of this irritation previously mentioned. This obstruction to the blood-stream constitutes a resistance for the heart, which must therefore become hypertrophied. Since, in atrophy of the kidney, there is a greater abundance of abnormal substances in the blood, the contraction of the blood-vessels comes on early, and is followed by a narrowing. Therefore, in this form of nephritis, hypertrophy of the heart appears earlier, and to a much higher degree."

TREUPEL, at the Physicians' Society in Freiburg, Oct. 31, 1902, discussed the treatment of hemiplegia in the following terms: Up to a few years ago the pyramidal tract was regarded as the sole path of motor impulses alike in the brain and the spinal cord. More recent investigations, however, have led to knowledge of the fact that in addition to the pyramidal tracts, there are other motor canals, which may enter in by substitution. According to experimental evidences, it has lately been found that the hemispheres of the brain may acquire control over the same side of the body. If this premise is laid down in the beginning, the treatment of hemiplegia of cerebral origin comes next to attention. There are small and partial lesions in the internal capsule, which, clinically, give either no symptoms, according to Nothnagel, or which cause only a temporary weakness of the muscles on one side. In these rather light cases probably the intact fibers of the pyramidal tract become substitute paths for those which have become destroyed. It is therefore possible to make the following statement: That there can hardly have been a total loss of the motor cells in the cortex of the brain on one side or a total interruption of the internal capsule and its fibers in such cases. When such total lesions have occurred and recovery follows, it is necessary to suppose that the healthy hemisphere has taken the place of the damaged one, and exercised a motor influence upon the same side of the body. This kind of compensation seems to be more common in paralysis of the cortex, namely the destruction of the motor cells themselves of one side. It is worthy to note in this connection a case of Monokow, frequently cited in literature, namely, in a twelve-year-old boy with an early developed porencephalia, and also a very completely right-sided defect of the central convolutions of the operculum and of the lobus paracentralis, and an almost complete failure of the corresponding pyramidal tract, suffered a light damage of the muscles on the left side. The autopsy showed in addition to an almost complete disappearance of the right pyramidal tract a compensatory excessive development of the left. In such cases the motor impulses, as has been experimentally proved, pass through the same sided anterior pyramidal commissural fibers and anterior commissure of the spinal cord. On the other hand, according to the experiments of Bechterew and others in monkeys, and as has been claimed and shown by Munk, Gaule and others, a restoration of the motor centers may take place, and that especially the subcortical important ganglia of the brain, for example, the optic thalamus and corpora quadragemina may be brought to an independent efficiency of innervation. Through the medium of these subcortical brain ganglia, there may be, furthermore, when the internal capsule of one side has been totally destroyed, the following motor paths supplied by substitution: (1) cortex of the brain, optic thalamus, corpora quadragemina, and the lateral tract of Monakow. The last named go, then, from the red nucleus to the anterior corpora quadrigemina, and run, after crossing in the ventral part of the tegmentum, through the lateral part of the pons and the medulla oblongata to the spinal cord. In this they may be followed in the lateral tract of the spinal cord, ventral to the lateral fibers of the pyramidal tract, down to the sacral portion of the cord; (2) cortex of the brain, optic thalamus, corpora quadrigemina and the anterior commissural fibers, according to Probst and others. In this manner the injured internal capsule and the lateral pyramidal tract are totally avoided. In addition to these chief substitution paths, as they might be called, there are other paths, namely, the cortex of the brain, the lenticular nucleus and the cortex of the brain and the fibers of the corda, corpus callosum, etc. The two described above, however, are certainly the most important. Recently Münch and Petersen have shown as very likely that the centrum is the chief path of reflexes from the skin to the cortex of the brain. This point is of considerable moment. All of these facts and theories may be made use of in the treatment of severe hemiplegia. For example, if there is imagined a complete right-sided hemiplegia through destruction of the left internal capsule, the patient is directed to stretch out his injured right hand to that of the observer. This command follows this path: Through the ear and the organs of hearing into the temporal lobe, and also through the path of sight into the posterior half of the brain. From these points outward there pass association fibers, which finally reach the center of the arm on the cortex. This innervation impulse is started, which passes in to the pyramidal tract, down through the internal capsule, but is arrested there through the lesion. From this point it is supposed that through the continual repetition of the command and the accumulation of its stimulus on the cortex of the brain, there finally occurs a very great impulse, which breaks out beyond the ordinary paths of the internal capsule. This is, above all others, most commonly along the course of fibers between the cortex and the optic thalamus. Through its common association system, the optic thalamus is in direct union with the optic lobes in the occipital origin of the brain, and the most recent researches of Schültz have shown a system of motor association fibers which embraces the known senses of the optic, olfactory and pain sense cells. For this reason it is all-important to make use of the daily repetition of this influence upon the brain, so that through the increased force of the will, this new path may be established. Similarly, practice in the imitation motions is very important, and when there is loss of the skin reflexes, electricity may be brought into use. In order to maintain the apparent equality in weight of the two limbs, these motions should be made, when possible, in water—in the bath. The movements, whether active or passive, must be made methodically, and the demand for active motion must be positively given. Through a loss of the reflexes in the lamed limbs, and through a special adaptation of electricity, the patient may be brought to believe that the muscles are still able to move, and that he, therefore, must have hope and trust. When this method of treatment is followed, although it must extend over a long time, the essentials of it are patience and understanding of what is to be realized on the part of the doctor, and great patience and perseverance upon the part of the patient. Passive motions must be repeated when the patient's eyes are closed, in order that his muscular sense may be revived. For this purpose, it is useful to use the same manipulations with both extremities. So soon as the movements begin to appear, various coordinated movements must be added, especially such as are concerned with the usual processes of life, for example, washing, combing the hair, and putting on the clothes. Motor aphasia, where only the words, and not the understanding, have been lost, is a condition in which practice is very advisable. When the facial nerve has been paralyzed, various movements must be practised before the looking-glass, and repeated many times during the day, of course, for short sittings each. The period of the disease at which these movements should be begun depends entirely upon the symptoms. In general, the physician should not wait too long. Perhaps on the fourth day after the sense of feeling has returned passive motion should be instituted, very briefly and gently at a time, and the regaining of reflexes and the use of electricity begun. If the patient begins with a few movements and fails, one must not feel that a primary failure is absolute. On the other hand, it is needless to expect that the hemiplegia shall, after a few weeks, become perfectly sound. Such is not the aim of this method of treatment. But when one thinks of the results obtained by Charcot 25 years ago, so that he could utter the dictum that, "when a lesion remains in the internal capsule so that the patient just escapes with his life, a severe paralysis with incurable contracture will remain," one is permitted to feel satisfied with the undoubtedly good results which to-day the use of these methods of treatment has certainly produced, as has been reported by Rhothman, Kohnmann, P. Lazarus, and others.

THE SIGNIFICANCE OF CUTANEOUS ANGIOMATA.

To the Editor of the MEDICAL NEWS:

DEAR SIR:—In connection with the interesting paper by Dr. Douglas Symmers in your last issue, while I agree with his conclusions as to the absence of any special relationship to malignant disease, there is, I think, no question of the frequency of the association of spider angiomata with various affections of the liver. This is a point which has been referred to frequently, and at the conclusion of a paper on the family form of recurring epistaxis associated with multiple telangiectases of the skin and mucous membranes (*Johns Hopkins Hospital Bulletin*, Nov., 1901), I called attention to their frequency in cirrhosis and cancer of the liver and in chronic jaundice from gall-stones. Much more common in these conditions than the small, circumscribed, slightly elevated, bluish or bright red angioma, is the stellate variety, which may also have a small, solid, bright red or pink center. In the case of catarrhal jaundice, mentioned in my paper, the angiomata subsequently disappeared. An interesting communication on this subject has recently been made by Prof. Bouchard in the Leyden Festschrift (see also *Revue de Medecine*, Oct., 1902).

WM. OSLER.

Johns Hopkins Hospital.

The Treatment of Rheumatic Diseases with Iodide of Sodium.—Dr. P. ZWEIFEL (Pract. Vratch, No. 46, 1902) recommends in cases of ischias, lumbago, torticollis and like rheumatic conditions, where the usual method of treatment fails, subcutaneous injections of a five-per-cent. solution of iodide of sodium. He reports a number of cases where this method was successfully used by him for the last two years, and he claims that not only does this method act more promptly than any other, but a relapse of the disease is also less frequent.

SOCIETY PROCEEDINGS.

OBSTETRICAL SOCIETY OF PHILADELPHIA.

Stated Meeting, held November 6, 1902.

The President, John M. Fisher, M.D., in the Chair.

THE evening was devoted to a symposium on "Pelvic Suppurative Processes in the Female Pelvis."

Pus in the Pelvis Depending Upon and Complicating Appendiceal Disease in the Female; Methods of Treatment.—By invitation Dr. John B. Deaver presented a paper on this subject. He said that appendicitis may cause a pelvic abscess in three ways: (1) By the extension of a purulent collection from the right iliac fossa to the pelvis; (2) by an appendiceal abscess in the pelvis with the appendix hanging over the ileo-pectineal line or entirely in the true pelvis; (3) by infection of the tube and ovary with involvement of both appendix and adnexa in purulent exudate. In the rapid cases of appendicitis with general peritoneal infection, the pelvis is as a rule filled with sero pus, but the majority of instances of pelvic abscess with an appendix above the ileo-pectineal line are due to a secondary involvement from the primary focus. The percentage of cases in which acute appendicitis exists in the female has been estimated by different observers with wide variation. During 1901, of 238 cases of acute appendicitis in the adult, operated upon by the writer, 34.8 per cent. were women. The error most often made in diagnosis is that between pyosalpinx and appendicitis. This error is more serious, in that appendiceal disease is progressive in character and demands operation during the earliest stages, while a salpingitis, which is usually due to gonorrhea, does not require an early operation because of the limiting nature of the disease. Pelvic abscess due to infection ascending the tubes will present symptoms distinguishing it from appendiceal abscess in most instances. A small ovarian cyst on the right side of the pelvis, twisted on its pedicle, may simulate appendicitis in the pelvis with abscess. Infection of ovarian cysts by a diseased appendix has been reported. Should the resulting hematocele of a ruptured ectopic gestation become infected, the differential diagnosis is rendered very difficult. A very interesting phase of appendicitis, is when the right tube or ovary may become infected from a diseased appendix in the pelvis. Of the 83 cases of acute appendicitis in the female, operated upon by the writer at the German Hospital, disease of the adnexa was coincident. In one a cystic condition of both tubes and ovaries was present; in another a double pyosalpinx with an infected appendix. In three cases an acutely congested and inflamed appendix was undoubtedly the cause of a right sided pyosalpinx without any disease of the left side. The treatment of appendiceal abscess will depend upon the location of the pus and the condition of the patient. Where the abscess is high enough in the pelvis it may be reached by an incision in the loin and reflecting the peritoneum from the iliac fossa, opening and evacuating the abscess below its upper limits. The cavity is then washed out and packed with gauze. An extra-peritoneal operation of this nature is only to be advocated because of the size and situation of the abscess and the infectious nature of the appendiceal pus which may render a complete operation more hazardous. If the condition of the patient is desperate, *i.e.*, if the anemia and sepsis are so marked that a prolonged operation would cause death, the abscess may be evacuated by drawing the cervix well forward and freely incising the posterior wall of the vaginal vault, opening the peritoneum and evacuating the pus. Irrigation should not be practised, and the cavity simply drained with gauze. Whenever possible the abdomen should be opened, the intestines walled off with gauze, the appendix and any infiltrated exudate or serum or omentum ligated and excised, and the tubes examined, especially on the right side. In many instances they will be diseased and may have to be removed, but if possible should be left in situ, after walling off with sterile gauze.

Pus in the Pelvis as a Result of Bone or Joint Necrosis.—Dr. H. Augustus Wilson, by invitation, briefly presented the orthopedic aspect. He said that there were three principal sources of pus in the pelvis having its origin in tuberculous bone, *i.e.*, Pott's disease, hip disease and sacro-iliac disease. Emphasis was laid upon the difficulty of diagnosis in cases where disease of the pelvic organs coexisted with tuberculous bone disease. The distinctive evidences of the disease of the spine must be relied upon in Pott's disease. In hip disease pus in the pelvis can only occur in those extreme cases where the acetabulum is perforated and even then the pus usually tends to a downward course and outlet. Sacro-iliac disease is the most difficult to differentiate of all bone and joint diseases, because the disease comes on in adult life and insidiously, is often caused by pregnancy and therefore its existence is overlooked until its extensive ravages assume such shape as to render its recognition beyond question. Attempt was made to remove the idea of the hopelessness of tuberculous bone and joint disease, which conception has done more than anything else to interfere with complete recovery by postponing the application of proper treatment. Tuberculous bone disease should be considered as such only when the conditions are in the so-called incipiency. The conditions arising after that period should be classed as results of and not necessarily a part of the disease, and the occurrence of which should always be viewed as avoidable.

Vaginal Section in Suppurative Diseases of the Pelvic Structures; Indications and Technic.—Dr. E. E. Montgomery read a paper on this subject, in which he said the operation is not suitable for every case and will be chosen or rejected largely according to the experience and predilection of the individual operator. If he were obliged to choose a procedure which should be applied to every case, he would be compelled to accept the abdominal rather than the vaginal. Where there is a large collection in the pelvis, however, the vaginal route affords a more ready method for its evacuation with less injury to the general health of the patient and affords ready drainage. The operation should not be chosen in cases of undilated vagina, nor where the suppurative collection is situated high in the abdomen and does not dip down into the pelvis, nor where it is confined to only one side of the pelvis. It should be the operation of election when the retro-uterine pouch is the seat of a large collection, whether this be secondary to tubal disease or result from a degeneration and infection if a pelvic hematoma. It should be the only procedure considered when the condition of the patient is so precarious that a severe operation is undesirable. The experienced vaginal operator would prefer it when both ovaries and tubes are so evidently destroyed that their retention would be a menace to the life and future health of the patient.

Drainage in Operations for Suppurative Disease of the Pelvic Organs.—Dr. Baldy said in few exceptional instances, there is no other condition in the pelvis than suppurative disease, in which drainage is a proper procedure. Drainage in non-suppurative disease is an admission that the surgeon has not yet learned the value and use of the needle and catgut. In cases of ovarian abscess, pus tubes, and abscess of the uterine wall (where it is justifiable to remove the uterus), in but rare instances, is drainage necessary. The one thing which should most often decide the surgeon to drain is the acuteness and virulence of the infection. An acute suppuration of the pelvic organs, either gonorrheal or puerperal, should be allowed to advance as far into the subacute stage as is consistent with the safety of the patient before an operation is performed. When in doubt the decision is generally against drainage. Suppurative disease of the pelvis itself, such as puerperal abscess free in the pelvic cavity (intra-peritoneal), suppuration in the pelvic connective tissue (broad ligaments, etc.) and pus in the pelvis as the result of bone or joint necrosis will always demand drainage, and the sooner it is established the better. In the first two conditions vaginal drainage is the safest and best. The writer does not drain more than possibly five per cent. of his cases. If drainage is not instituted in a given case, other causes being excluded, the knowledge that the case was one for possible drainage, the temperature and pulse, together with the vaginal examination, will render the nature of the trouble perfectly apparent, and will demand the opening of the vaginal cul-de-sac into the peritoneal cavity, irrigation and the introduction of a drainage tube. In his judgment the risks of pelvic surgery are reduced to a minimum and the best interests of the patient subserved, by dispensing with the drainage tube whenever possible, especially when it is true that where an error of judgment has been committed the mistake is so readily and safely corrected.

Dr. Richard C. Norris said that the experience of all men who deal with pelvic diseases is to find a certain proportion of appendiceal inflammations associated with inflammatory conditions of the tubes and ovaries. A recent article which no doubt most of those present had read in which expert bacteriological and pathological examinations were made of the appendices removed at the time the pelvic inflammatory conditions were dealt with, shows a strikingly large proportion of associated lesions. Kelly's recent inquiry shows that most all surgeons remove even the slightly affected appendix when the abdomen is opened for any other cause, and that many surgeons justify the removal of the normal appendix when the abdomen has been opened for other affections. These opinions and practice make a distinct advance in the gynecologist's conservative labors. His own experience with pus due to bone lesion is a limited one. He had records of two cases in which the traumatism of labor or the use of instruments, followed by infection, has produced bone lesions with production of pus giving rise to symptoms requiring the application of the principles of drainage. As to vaginal section and drainage after celiotomy, he believed the majority of men who are doing active, aggressive work are pretty much of the same opinion. The limitations of both are growing more and more narrow. Dr. Montgomery pointed out the indications for vaginal section in pelvic inflammatory conditions in women. The keynote of the whole problem is accurate diagnosis. Large collections in the desperately ill, all agree should be approached through the vagina. If one could in all cases of chronic lesions make an accurate diagnosis of visceral adhesions and disseminated foci of suppuration, the selection of the route for operation would be clearly indicated. The most enthusiastic vaginal operator will sometimes go far afield in his diagnosis even after the vaginal section has been completed. Vaginal incision certainly can produce drainage and will relieve large collections of pus, and there are few practising gynecologists who would not select such a route for patients desperately ill. Localized collections of pus in the tubes, ovaries and intestines may be beyond our reach by the vaginal route; there may be serious lesions of the bowel or appendiceal complications in which cases we work blindly, and he was far from convinced that vaginal section can accomplish such complete work, or that convalescence is quicker than after operation through the abdominal route. Drainage may be more readily secured than by the old method of the glass tube, and yet he thought there were once in a while undetached pockets of pus, and a stormy convalescence which would have been avoided by operation through the abdominal route. When there is doubt as to the exact lesions the abdominal route offers greater advantages. A man may pride himself upon his diagnostic power in determining the exact character of the lesions in the pelvic cavity, but he will sometimes err. The necessity for drainage is often a question of technic. Many may not employ drainage when others not so skillful in their technic would risk the patient's life without drainage in some cases. As a man advances in his operative career he gains an experience and skill which teach him to deal deftly with raw and bleeding surfaces. He learns to make hemostasis complete, to prevent or repair visceral lesions, to avoid spreading infection, and thus his drainage tube or gauze is less frequently used, and the convalescence of patients is more satisfactory. The wide application of hysterectomy in these old pelvic inflammatory cases shows this principle. Formerly glass tube after glass tube was used. Now when we resect the uterus and ligate the blood vessels in the broad ligaments hemostasis is perfect and there is no pool of blood to be a nidus for germs, and drainage is not required. As our technic has changed, so have our habits of practice as to drainage. He believed it is a growing practice among operators to drain through the vaginal vault when drainage is necessary. The bacteriologist at the operating table can tell the surgeon the kind of infection present, but he cannot tell the degree of virulence of the germ he finds under his lens, nor is the power of resistance of the patient known to a certainty. The surgeon, therefore, cannot always, by such examination determine whether or not drainage must be used. Dr. Penrose and Dr. Baldy working side by side in the same hospital put this method to the practice test. The former utilized it, the latter disregarded it, and the differences in mortality and morbidity showed that those bacteriological tests had little or no practical value. One's own experience, judgment and skill are more to be relied upon. Doubtless errors cannot always be avoided. When the patient's illness and the local lesions indicate virulent infection with the coli communis or streptococcus drainage will often be necessary. The question of opening the vaginal cul-de-sac for primary or secondary drainage is one which comes to every operator. He preferred to drain into the vagina when drainage is employed. Once in a while a collection of blood or serum remains and is infected. Incision of the cul-de-sac, several days' washing out and packing will be followed by prompt convalescence. He had done that several times, and thought men who have departed from the routine drainage of former years have rescued patients by this secondary drainage when there was inability to determine at the time of operation that primary drainage was necessary.

To recapitulate: It was his conviction that every one drained less than formerly. When drainage is indicated the vaginal route used freely accomplishes the most. The glass drainage tube in pelvic surgery has rapidly disappeared and probably will soon be a curiosity. Men who operate by choice through the vagina accomplish excellent results in a great many cases because of their skill, their judgment, and their accurate diagnosis. Their failures would, he believed, be less with the same skill and judgment working through an abdominal incision.

The recent studies of the frequent association of the appendix with pelvic inflammations and the necessity for surgical attention to even insignificant lesions of the former are a distinct advance in our work. While some operators may consider the removal of the appendix, under the conditions named, aggressive or even meddlesome surgery, he believed one will finally learn that it is conservative work, the credit for which will belong to gynecology.

Dr. George G. Ross said that there seems to be a radical difference in opinion as to the value of drainage. In pus of appendiceal origin there was an entirely different problem to solve. If there is pus in the pelvis due to appendicitis the question of whether or not we will drain has been decided before the surgeon opens the abdomen. If the patient's general condition permits, thorough drainage, a search for and removal of the appendix are wise things to do. That the appendix can be removed in the majority of acute attacks of appendicitis associated with abscess formation has been demonstrated conclusively. Search for the organ will often reveal a secondary collection which would otherwise have been overlooked. Another reason why the appendix should be removed is that when plastered down against the posterior wall of the right iliac fossa its anterior surface forms part of the abscess wall. The posterior portion is in the same inflammatory condition as the anterior, and from its contact with the postperitoneal lymphatics there is a direct communication with the general lymphatic system, which not infrequently costs the patient's life. The great point to be made in this question of pelvic suppuration is whether the suppuration is due to appendicitis or to disease of the adnexa. The dissimilarity of the infections of the two diseases is a valuable lesson pointed out tonight, for on the one hand we encounter pus of a low grade of virulence while in the case of the appendiceal infections we have to deal with pus whose destructive possibilities are as great as any met with in the human organism.

(To be continued.)

THE NEW YORK ACADEMY OF MEDICINE.

Stated Meeting, held December 4, 1902.

The President, Robert F. Weir, M.D., in the Chair.

On the Need of Radical Reform in the Teaching of Medicine to Senior Students.—By Dr. William Osler, of Baltimore. (See this issue p. 49.)

Professor H. L. Burrell, of Harvard University, said that educational reform, during these past 20 years, has been gradually increasing in vigor, until it has become an imperative duty to consider its demands and needs by all who have to do with education. The true method or methods of acquiring and imparting knowledge have not been determined, from the fact that no one system has been tried a sufficient length of time to test it thoroughly.

Froebel, with his kindergarten method, made a deep impression upon educators. The preparatory schools of this and other countries are at present experimental stations. There are certain currents of opinion which seem to indicate that a few principles have been established; one is, as has been said by President Eliot, "train men for power." Another principle is to allow the student to acquire knowledge rather than to receive information. Accepting the men who have devoted their lives to the problems of education are unable to agree as to the best method of education, it is easy to understand why medical education halts as to its methods of improvement. The group of men who are assembled in Baltimore at the Johns Hopkins Medical School, made up of men of distinguished attainments as individual thinkers, have been fortunate in having conditions which they could largely control in the way of small classes. I think it may be said that the whole country has watched with the keenest interest the development of education at the Johns Hopkins Medical School, and while listening and seeking for the truth have yet recognized that the environment of their own school, hospital and city must, of necessity, be considered in adopting improved methods of instruction.

I beg to present for your consideration three ways in which the teaching of medicine to senior students can be improved. The *first* method is to have a curriculum which shall consists of minimum required work and maximum elective opportunity. The minimum required work should consist of the absolutely essential knowledge of all fundamental studies necessary to make a well-informed physician, whether the student is to be a practitioner of medicine or one who is to devote himself to the science of medicine. The maximum elective should afford to students, after they have mastered the fundamental studies, the opportunity to acquire knowledge in any direction they may elect.

The course of study in a medical school, I believe, should cover a period of four years, three years to be devoted to the required, and one year to the elective, studies.

The plan which was adopted at the Harvard Medical School last June may be of interest to you: (1) The fourth year to be elective without any restrictions; (2) the total number of hours required of each student to be one thousand; (3) certain courses to be recommended as fitting a student to become (*a*) a general practitioner, (*b*) a specialist in, or teacher of, any department of medicine; (4) an advisory committee to be appointed with whom the students may consult concerning the selection of studies; (5) in general the forenoon hours to be devoted to practical work in hospitals and laboratories, and the afternoon hours to the lecture room and laboratories. The first year and a half is to be devoted to the study of anatomy, histology, physiology, physiological and pathological chemistry, pathology and bacteriology. The second year and a half, completing the three years, is to be devoted to medicine, surgery, obstetrics, hygiene, pharmacology, dermatology, gynecology, pediatrics, neurology, syphilis, ophthalmology, otology, laryngology, legal medicine and psychiatry. During these three years the student is to devote himself to these studies at their minimum. During the fourth year he may devote his one thousand hours of time to such electives as he may select.

The second method, which I hope will be adopted by the Harvard Medical School, is to require all students, during the fourth year, to serve as clinical clerks and surgical dressers in the wards and out-patient departments of a hospital. The service should consist of four months' service as clinical clerk in the medical out-patient department, two months' service as clinical clerk in a medical ward; two months' work as a dresser in the surgical out-patient department, two months' work as surgical dresser in the surgical wards, two months' work as assistant in some elected special out-patient department.

This plan would take six months of the student's whole time and six months of his mornings or afternoons. It would necessitate the abolishment of the third year vacation for a certain number of students, and although this may, at first sight, seem a hardship to the students, when it is considered that they are in a technical school acquiring the knowledge that is going to fit them to gain a livelihood, it is not too much to expect that some of the students should be willing to work during one summer of their four years' course. This plan would be simple to carry into effect if the school has a hospital and, I believe, can be made practical even if the school does not have a hospital.

To make this plan effective it would be necessary that the three parties concerned, the student, the hospital and the school, should each find it advantageous. It would be of advantage to the student for he would gain that practical experience that he so keenly desires. At the present time he gains more or less of this experience by obtaining through personal solicitation, an appointment as an assistant in some out-patient department; occasionally he is allowed to enter the wards of a hospital. He cuts the regular exercises of the school.

It would be of advantage to the board of government of a hospital for assistants would come to them from a responsible body, with regularity, having been trained for their duties. The boards of government of certain hospitals object to students entering the wards of their hospitals. If it can be shown them that the patients are more efficiently treated, that the number of house officers necessary for properly doing the work can be diminished and that trained men can take their places, I believe that trustees will recognize the desirability and the economy of this plan. Certain members of the staffs of hospitals, not connected with medical schools, may object to this plan, for they would feel that they were giving instruction to students. Not at all. They are simply allowing students to acquire information. The possibility of obstruction on the part of certain members of hospital staffs should lead the board of government of a medical school to deal directly with the board of government of the hospital, for this plan would avoid petty considerations. Should this plan be adopted in New York City and should any hospital refuse to take medical students, it would quickly place itself in a position where it could not have the assistance it now requires to care for its patients.

From the school's standpoint the advantages are manifest. It would in an organized manner provide opportunity for students to acquire practical knowledge. The mornings or afternoons of the fourth year could be devoted to this practical work. The students would be required to come promptly and to remain until the work was done. To make this plan effective the students should be under medical and surgical tutors, whose duty should be to see that the agreement on the part of the school to furnish assistants to the hospital is fulfilled; to encourage the students by counsel and advice to get benefit from the cases with which they are brought in contact; for example, if a student were serving two months in the surgical out-patient department and were coming in contact with a number of fractures of the elbow-joint, he should be at liberty to confer with the tutor at specified times, who should stimulate him to acquire a competent knowledge of fractures of the elbow-joint, from the literature of the subject, from museum specimens and from such other sources as might be desirable. An important function of the tutor also would be to encourage the student to carry out a line of research work in clinical subjects, not so much for the value that would come from this research work to the science of medicine, as the habit acquired by the student to pursue an individual subject until it is completed. The remainder of the time in the fourth year should be devoted to laboratories and lectures.

This plan is practical. The three parties concerned, student, hospital and school, would all be benefited. The function of hospitals would be better carried out in that the patients would be better cared for, for there would be a greater number of assistants and greater care of the individual patient; the plan would also be an economy, for it would diminish the number of house officers. The length of service of house officers, who should all be graduates, under this plan might be readily shortened to a year, for the house officer would come to the hospital with greater experience.

The third way to improve teaching is to recognize clearly the scope and character of lectures and section work. The professors in a medical school should direct the work done in their departments. The section work should be given to small classes. The more nearly personal the instruction is, the better. It should not be a clinical lecture nor a clinical demonstration, but should be the drill of the individual student in the fundamental studies; for example, drill in taking histories, in making physical diagnoses, in establishing the treatment of patients. The lecture, on the other hand, should be given to large classes; it should, first, present in a concentrated form, the experience of mature teachers; second, it should present the advanced knowledge on selected special subjects. The lecture's great value, if properly given, is to serve as an inspiration to students to do better work.

Professor MacFayen, of Toronto University, said that he always tried to impress both the student and the public with the importance of the hospital. The function of the hospital was threefold: (1) To care for the public at large; (2) to train nurses to care for people outside, who are unable to go to the hospitals; (3) to train medical students to care not only for the rich but for the poor as well. At Toronto the utmost freedom was given the student to enter the hospitals, and they prepared the work for the clinics. It was not difficult to give this hospital work to small classes, but when classes numbered upwards of a hundred or more, it became quite difficult. He did not consider the lecture as important as clinical work, and said that more were given than were necessary in order to comply with the law requiring students to attend a certain number. To know a disease abstractly is of little practical use, we want to know what it is in the concrete.

Dr. Edward G. Janeway said that as conditions were different at Johns Hopkins' things could be done there which were not feasible here, though Dr. Osler's methods were approximated. In the college with which he was connected no didactic lectures were given during the fourth year. The students were given laboratory work, section work and dispensary work instead. During the earlier years the place and purpose of lectures must be left, to a considerable extent, to the teacher. Students were not selected here as at Johns Hopkins' and it would not do to turn them loose in the hospitals. In regard to clinics he was not prepared to say that we should do away with them because we obtained material there to illustrate to students such cases as we could not otherwise obtain. He thought the time was not far distant when the hospitals of this city would become centers for the education of students far more than they have been in the past. As Dr. Osler had published his views in books he should be more lenient to those instructors who gave theirs by didactic lectures.

Dr. Walter B. James thought that the most important duty of the hospital was caring for the sick and injured, and not even the ends of medical education should be allowed to interfere with this aim. He had watched the change that had taken place in New York City during the past 10 or 15 years in the extended collateral use of hospitals, and felt sure that the advantages offered were far greater than formerly. He thought there was material in the clinics of New York City to equip all the first rate medical colleges. Every teacher should be a law unto himself. If a man did not believe in didactic lectures he should not give them. The question of how to use the hospitals depended largely upon the personality of the man. He felt that a thorough knowledge of medicine could be given a young man by regular teaching, by small sections in hospital wards, when not occupied with clinical classes. He thought that the amphitheater occupied an important part in medical education. In New York it had largely taken the place of didactic lectures; indeed, it was the most important single element in medical education. He believed in the four years medical curriculum, though that time was too short for a man to get more than an insight into medicine. The four years should be devoted to the entire field of medicine, including the specialties. One of our most important duties was to attempt to inspire our students with the wish to be good students, so that when they have graduated they can go on and study with good scientific sense.

Dr. W. G. Thompson said that he did not think that Dr. Osler need feel so discouraged because so many men failed to pass the United States Army board because the army did not attract the best class of men. The medical student of to-day had an enormous pressure of duties forced upon him; there was so much knowledge to be given the student that we should not spend so much time in teaching him methods. Dr. Thompson thought that study in the laboratory was often overdone. The enthusiasm of the specialist often leads him to demand more time of the student than he can well spare. Instruction in the practical branches should begin, to a slight extent, in the second year. He recommended recitations from text-books during the second year in order that the student might become familiar with the large vocabulary of medicine. We should keep in mind the general demands of the general practitioner; all are not designed to become distinguished specialists. Our object should be to turn out well rounded, well balanced, general practitioners. He agreed with Dr. Osler that didactic lectures could in part be abolished and bedside teaching substituted. However, he thought that many principles could be better learned by means of lectures. There was some danger in bedside instruction, for it was impossible to demonstrate in one case all the symptoms that might arise. The instructor can call attention to those symptoms which the patient has, and then tell the student what he has not. This can also be learned from recitations. If the class were large there was a tendency for the student to lose interest in a particular case, as the subject is apt to be presented with more or less confusion. Systematic work and systematic instruction is the only method that will enable the student to pass for internes, State boards, and other examinations.

Dr. E. B. Cragin told how for five years the College of Physicians and Surgeons had been trying to solve the problem as to how to bring the student to the bedside in obstetrics. The University had control of the Sloane Maternity, but it seemed that the patients objected to having students in the wards, for though the service might be very large in September, at about the time college opened in October, the patients seemed to go elsewhere. It might be different in special subjects. The question that confronted the Chair of Obstetrics was not how to bring 100 students, but 200 students, before the patient in the hospital. The class was divided into sections of six men, and each section resided in the hospital for two weeks. During that time they see obstetrics morning, noon and all night at the bedside, and they hear about it for one year from the clinical instruction. The speaker said that he was in favor of the recitation plan. For three-quarters of a year as thorough ground work as possible was given by means of recitations, and for three-fourths of a year didactic and clinical instruction were given. They showed in the clinic what had been given in the didactic instruction which had preceded. During the fourth year nothing but practical work was given. They first gave the student the ground work and then as much practice as could be had in a class of two hundred with only eight months in which to work.

Dr. Ellsworth Eliot was of the opinion that in general surgery as in medicine as much knowledge as possible should be imparted by clinical methods. He did not think that we could impart all that was necessary in a clinical way. Text-books of such men as Dr. Osler had standardized general medicine, but there was no single text-book in surgery that imparted the ideas of those who were teaching surgery in the medical schools of New York City. The interesting facts of surgery are not contained in text-books. There was no doubt but that a lecture well delivered had an important function in teaching students the way to think and to approach the subject. It was impossible to cover the entire subject by didactic means. The didactic lecture is useful in keeping abreast with the changing views of the times, with which it is impossible for a text-book to keep pace. The recitation is a valuable means of giving instruction to the student, because you cannot tell how much of a subject he grasps at a general clinic. It is also an excellent plan to get the students together in the amphitheatre and talk over the results of the week's work. The essential thing that we aimed at was a thorough comprehension of the subject. Even where the student is admitted to the wards of a hospital he is often denied the privilege of general observation; in a case of fracture the instructor may point out the point of tenderness, etc., but the student did not note it himself. In a case of general peritonitis the student was rarely allowed to touch the abdomen. There are always a certain number of cases in which it is impossible for the student to follow the teacher, and in a recitation he tells what is of interest in this class of cases.

He thought that recitations gave us the only way to bring about an understanding of the subject; the instructor not only finds out what the student does, or does not know, but is enabled to explain what may not be comprehended by the student. A medical school should teach men that even when they receive their degree they are not finished products, but that they have a great deal still to learn, in fact, that they have just begun, and that they must continue to work hard if they hope to perfect themselves in the practice of their chosen profession.

Dr. William Osler, in closing the discussion, said, that if others had talked with the Army Medical Examiners as he had, they would think the title of his paper justifiable. The mental caliber of men could not be judged by the showings of the State Boards. State Boards were iniquities; they had no idea of a practical medical examination. He thought the medical student should have the greatest facilities afforded him during the third and fourth year in the use of materials in dispensaries and hospitals. He thought there should be a closer contact between the patient and the medical student.

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SPECIAL ARTICLE.

THE MEDICAL INSPECTION OF SCHOOLS: A PROBLEM IN PREVENTIVE MEDICINE.*

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AS PREVENTIVE medicine, when viewed in its broad, general sense, indicates not only the prevention of disease and its consequences to the individual, but of still greater import to the mass of people; so does the medical inspection of schools primarily concern itself with the individual and thereby occupies a deserving place in the efforts being made to eliminate disease and conserve health and also in a far reaching way, it embraces the betterment of the masses both in its hygienic and economic aspects.

Daily medical inspection of schools, and this especially is what is desired to emphasize here in contradistinction to occasional inspection, was successfully inaugurated in Boston in 1894 as the result of an unusual prevalence of diphtheria. The success obtained from this experience and the agitation that had been promulgated for several years previous, began to have its influence on the health and educational boards of other cities, with the result that various degrees of inspection of school children was authorized in New York City, Chicago, Orange (N. J.), Philadelphia, Newton and Brookline (Mass.), Jersey City, Asbury Park, Milwaukee, Minneapolis, Salt Lake City and Cleveland. In Boston when this measure against disease was first instituted, the city was divided into 50 school districts and an equal number of physicians were appointed so that each would visit daily a single district. But a few months after Boston had inaugurated this work, Brookline appointed six inspectors and four substitutes, while Newton appointed physicians for each district to examine the children in school or elsewhere in the event of suspected disease. Although agitation was vigorously continued in other places by those who realized the immense benefits to be derived by this phase of preventive medicine, no results were obtained until 1895 when Chicago was for this purpose divided into nine districts with one medical inspector assigned to each, thus giving each inspector about 30 schools. In New York City medical inspectors were first appointed for the public schools on March 16, 1897, and 134 physicians were selected to visit the schools daily, while in Philadelphia and elsewhere it was not until 1898 that further results were secured. It may also be mentioned here that while medical inspection is of comparatively recent date in this country, in Paris a form of inspection was carried out in 1833, while the laws of 1842 ordered that all public schools should be visited by a physician who, in addition to inspecting the buildings, should also inspect the general health of the school children. Since then the system has several times been reorganized in order to improve its efficiency and has been of such value that it has been used as a model for similar hygienic work in all other French cities. While owing to its unqualified success, the school law of 1886 and the ministerial decrees and orders of 1887, have made medical and sanitary inspection obligatory for all the schools both public and private.

Before entering more fully into the details of medical inspection of schools, a clearer comprehension of what is being done in the various municipalities at present having this system in part or whole, will enable one to obtain a better view of the question as it at present stands. In Brookline the school department cooperates with the Board of Health and all the public schools are inspected daily or less frequently, depending upon the amount of disease present. During varying intervals when the town is entirely free from contagious diseases, the inspection may be temporarily suspended, but such a system while having its pecuniary advantages in a small town when contagious diseases may be entirely in abeyance at irregular intervals, cannot be of much value in a large center of population where diphtheria, scarlet fever, etc., are always present to a greater or lesser extent. The inspection in practically all of the places where it is carried out by a number of inspectors, is made during the early school hours preferably between 9 and 10 A.M. and the teacher in charge of each room refers the pupils who present symptoms of illness to the inspector, who occupies a separate room where the children are examined and a diagnosis is made. In case of contagious disease being discovered the child is immediately sent home with an explanatory card advising the parents to call in their family physician, while in non-contagious diseases depending upon their nature the teacher is directed to retain the child in the class and to later advise the parents that the child requires medical attention, or in event of the child being too ill to remain, it is sent home with a card to that effect. Depending upon the distance between the schools an inspector may have one or several to visit daily, this of course differing dependent upon the local conditions in various cities. In Minneapolis the system is a volunteer one and has been in operation for less than a year, but it has been very satisfactory and the inspectors make a weekly report to the chief inspector, who in turn issues a monthly report. In ordinary cases the pupil is sent home with a blank which states to the parents that the child appears to be ill, while in contagious diseases a special postal in addition giving the name, address, diagnosis, etc., is mailed to the Department of Health, thus placing the child under early quarantine, which, without the detection of the disease by the school inspector, would not have been the case and in many instances preventing the infection of other pupils. In Newton where daily inspection is being seriously contemplated, the pupils are examined as regards the presence of illness only at the beginning of school after a vacation, but this of course has little value and while it may succeed in detecting some cases of illness that appear at school at such times, it in no way fulfils any practical service towards the prevention of contagious diseases.

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In Philadelphia daily inspection is under the administration of the Board of Education, 200 volunteer inspectors visiting the schools daily before 10 A.M., and as a result of the first year's volunteer work, over 5,000 pupils requiring medical attention were found and referred to their family physicians. The usual system of ordinary and special diagnosis cards are used and the principal of the school to whom the children with any ailment are referred, fills out a blank for the child to take to its parents from the diagnosis card furnished him by the inspector. The Educational Board observes the laws of the Board of Health in regard to dangerous, contagious or infectious diseases such as cholera, smallpox, diphtheria, diphtheritic croup, membraneous croup, scarlet fever, typhoid fever, typhus fever, yellow fever, epidemic cerebro-spinal fever, etc., and in such cases a special card is furnished which is immediately mailed to the health authorities, while the child is sent home at once. While in cases where whooping-cough, measles, chicken pox, skin diseases, mumps or other ailments which are not mentioned in the "dangerous" list are found present, the ordinary diagnosis card is filled out and the principal of the school is notified that the child cannot return until a physician certifies a cure. At the end of each month the head of the school sends a report of the diagnosis cards to the Board of Education with the name of the pupil, residence, age and diagnosis placed upon it. The system in Philadelphia, if properly carried out, as in New York, Boston and a few other places, would do much toward reducing the prevalence of contagious diseases, but for want of appropriations the inspectors after two years' work with no leader nor compensation, have gradually dropped their appointments until at present not more than 10 per cent. are visiting the schools and the present status of daily medical inspection in this city is one of masterly inactivity.

Boston and New York City at present undoubtedly lead in the care exercised by these respective municipalities over the health of the school children. The former city has probably the best system in use to-day and with an efficient corps of some 50 inspectors, material results are being obtained in this field of preventive medicine. This is well shown in the work accomplished in 1900, when of 15,573 pupils examined in the schools, 3,055 were sent home for various diseases and many physical defects were by this means eradicated which had otherwise retarded the work of the individual and had seriously impeded their full mental and physical development. The inspectors are also authorized agents of the Board of Health and in addition to visiting the public schools daily to examine all sick pupils and to advise the teacher concerning them, they also decide questions concerning the attendance of such children as live within the same building in which there is a case of contagious disease and in addition they visit every case of diphtheria, membraneous croup and scarlet fever reported, to ascertain the effectiveness of the isolation. In New York City the division of medical inspection is also under the Sanitary Bureau of the Department of Health, with an efficient corps of about 250 inspectors and daily reports are made to the Chief Inspector who in turn presents a detailed weekly report to the assistant Sanitary Superintendant. Not only are the public schools subjected to the daily examination of the pupils, but so also are the parochial, tenement schools and various societies where children are daily grouped together. The blanks used to report contagious or non-contagious diseases do not differ in any essential respect from those previously mentioned, but in suspicious cases cultures are taken and in all cases where the throat is examined, individual wooden tongue depressors are used which are then destroyed; a matter apparently trifling in itself, but one of much import in preventing the transmissions of diphtheria or more rarely syphilis.

At Asbury Park the medical inspector visits the school each day at 10 A.M. and ascertains the nature of the illness present in such pupils as have been referred to him by the teachers, each child bearing a blank from the teacher containing in addition to its name, age, etc., the query as to the presence of sickness at home and the symptoms noted by the teacher which have directed her attention to the indisposition of the pupil. If the illness be of sufficient import, the child is sent home with a blank stating that it is ill and should be placed under the care of the family physician and later when he returns to school, a physician's certificate showing that recovery has occurred should be furnished. In addition to this a valuable record is kept of the individual, showing his name, age, class, weight, height, general condition, chest measurements, spine, cutaneous diseases, heart, lungs, nose, throat, teeth, eyes and ears; this is placed in an index so that the physical condition of the pupil can be readily ascertained in a few moments. Jersey City is divided into districts and each physician visits the schools in his assigned district twice a week, the sanitary condition is noted in addition to the detection of any apparent illness among the scholars and a postal report is made to the health board. Of course as regards the pupils this is but a partial inspection and to a slight degree only fulfils the conditions aimed at in the daily observation of the school children. Somewhat similar has been the work in Cleveland but the object here seems to be aimed along general lines of school hygiene as regards the physical surroundings of the pupils and is not essentially concerned with what is presented in this paper.

Wherever a school house is located, a field is at hand for the practice of medical inspection and as the subject is one of no limited extent, but as broad and as far reaching as the existence of disease, so must every individual professional or layman, have some interest ultimately in anything which will aid in preventing the sickness of the child or in avoiding its contact with another having a communicable disease. According to the last census there are in the United States 26,110,788 persons of school age, that is between five and twenty years and while the various States have a multiplicity of laws regarding the so-called school age, yet 21,573,492 of these individuals are between the ages of five and seventeen years. Not all of these however go to school and all do not therefore enter into this phase of the question, but according to Kober there were in the common schools for the year ending June 30, 1900, 15,341,220 children, surely a sufficient number to cause some concern to be taken in regard to their physical condition. Yet as an actual fact, but an infinitesimal number of these 15,000,000 individuals, who spend the greater part of their time in school, receive municipal or State recognition for the demand of their physical condition, either to maintain their normal health or to prevent the dissemination of disease, as a routine measure but only are efforts made in the face of endemics or epidemics. The acute infectious diseases as diphtheria and scarlet fever, are especially prominent during the years at which the child spends the greater part of its time in school, while other communicable diseases as whooping-cough, measles and contagious skin diseases also occupy a similar relation in regard to their usual appearance during childhood or adolescence. While the school can hardly be accused of being in itself the cause of any of these diseases, yet no one can deny that it is a patent factor in their propagation and undoubtedly under many conditions found in the schools a train of physical ills are consequent that seem to be the price the child must pay for its education. It has been well said that "the object of the public schools is to train to good citizenship," yet one must doubt very much if the defective or the adult with the sequelæ of diphtheria or scarlet fever contracted from his schoolmate in boyhood, can do the work he is capable of when partially disabled by ill health, defective sight or impaired hearing, yet thousands of children are at school often under State laws compelling them to be there, trying to prepare for their future under physical impairments that their parents, were they in like position, would consider insurmountable.

The health of school children is a wide and complex problem, because all children during certain ages are at one time or another in school. It has only been recognized within recent years that the State owes more to the child, more to itself, than a mental education to a greater or lesser degree. Even now this is not fully recognized and in the majority of public schools under existing systems where no attention is paid to the pupils individual physical welfare, nor any attempt is made to recognize the presence of disease which careless parents neglect to observe at home, many hundreds, even thousands of lives are sacrificed annually and numerous others bear the scars of the educational fray till their life-work is over. A. K. Whitcomb states this succinctly when he says a phase of the subject which has been attracting widespread attention in recent years, has been the study of children physically defective. Tests in this country and Europe have shown a startling prevalence of defects which have been unsuspected by either child or parent. School children are of a susceptible age not only as regards their liability to contract contagious diseases, but to a marked extent to structural deviations from the normal, so common during this the formative stage. This is especially marked in girls and notably so in the high schools, a recent series of papers by Lovett and others showing this clearly, and the conclusions that girls are not as well on the average when they leave school as when they enter, seems to be borne out by actual facts. I am sure no one can go into a public school and not find at least one and often more scholars requiring medical attention. Spratling in a class of 40 pupils in Springfield (Mass.), found two consumptives, an epileptic, three with inherited syphilis, a typical moral degenerate and many suffering from defects of the teeth, tonsils and ears. It has been estimated that 11 per cent. of the public school children are unfitted to enter into competition with their healthy fellows and as these require education the same as the non-defective, medical inspection provides a means by which this large number may be materially reduced.

While but comparatively desultory investigations have been made in this country of the health of school children, yet considerable scientific work along this line has been done abroad. It is impracticable here to give details from foreign investigators of the influence of school life upon the health of the children, but it is desired to mention certain facts which have a practical bearing upon elucidating the value of competent medical inspection as but one of several hygienic measures directed towards increasing the mental and physical efficiency of the school child. In all 104,629 school children were investigated by various observers and it was found that there was a surprising amount of ill health especially among girls. Eliminating accidental or acute illness and myopia, the morbidity varied from 20 to 61.7 per cent., the latter in Stockholm among girls. While the morbidity of school children has been fairly well ascertained the question of mortality presents an entirely different aspect and practically embraces the mortality of youth in general, which of course cannot be applied to the results of school life upon the child. From careful studies made however by Chalmers of Glasgow, a great improvement has been effected in the health of school children during the past twenty years. The decrease in the death-rate of individuals from five to fifteen years of age amounting to about 38 per cent. in the time specified; which is equivalent in Scotland to an annual saving of 2,696 lives out of every million of school age. The result of the adoption of hygienic measures especially as regards medical inspection, is also shown by its effect upon the reduction of the mortality, for as a result of this inspection in Chicago, the mortality of diphtheria for the months of September and October, 1900, had been materially reduced, there being 42 and 77 deaths respectively for this year, while for the two similar months for a number of years the mortality was 85 and 127 respectively. While the report of the Massachusetts State Board of Health for 1896, shows that there were 72 fewer deaths from diphtheria than in 1895, although the number of cases reported was largely increased on account of the large number discovered among the pupils in the public schools by the medical inspectors and the bacteriological tests in the otherwise unrecognizable cases. The ratio of deaths to the number of cases reported was 11.48 as against 14.48 per cent. the preceding year. As before mentioned little scientific investigation has been done in this country to ascertain such relations to the health of the pupil, but in Sweden it was found that the morbidity was 5.3 per cent. higher in those who worked over the average time and in Denmark it was 7 per cent.

While the majority of communicable diseases incident to child life occur in the public schools as the result of bringing a number of individuals into daily, close contact for several hours at a time, yet there are a number of diseases which seem in their development to bear a close relationship to school attendance and which therefore may be grouped under the title of school diseases, or preferably diseases incident to school life. These may be grouped as those of the special senses especially refractive errors and to a much less extent various affections of the ears. Many cases of curvature of the spine are also assignable to this cause and nervous affections are common especially headache, insomnia, minor grades of chorea, etc. Affections especially of the upper respiratory tract undoubtedly have a near relationship to school attendance, while general infectious diseases, parasitic diseases and contagious diseases of the skin and eyes have in some repects a close affiliation. Neurasthenia or various nervous disorders are especially common among school children and near the close of each term of school, it is the experience of almost every practitioner to see a number of cases especially in girls of the higher grades, where physical breakdown is the result of the close mental application during the school term. Practically school diseases embrace all diseases to which children are heir, but two classes are especially applicable to the subject as considered here, the first being those affections which are the result of the school work or which are aggravated under these conditions, while the second class which has of late attracted the most attention, are the communicable diseases which may or may not be of a dangerous character. No one can doubt the deleterious effect produced by ill-health upon the capacity of the pupil for study and numerous instances might be related to show the failures made not only while the child was at school but even extending into later life, by unrecognized physical defects which could be repaired in time making a useful child instead of one only partially so, if some attention had been paid to his physical condition as is done in those schools where medical inspection is part of the daily procedure. A. K. Whitcomb gives a striking example of this in a boy of five, who attended school a half year without learning a single letter, finally after this time had been wasted it was found that he was so astigmatic that it was impossible for him to see a letter, while remedy of the defect showed him to be as competent as the other children.

As "the aim of an education must ever be the development of the fullest and soundest mental, moral and physical life of which the particular individual is capable," the question of ascertaining and caring for those not able to come up to the normal must also be seriously considered. Again the medical inspector may be of value in directing attention to those who are nervous, delicate or defective to a greater degree than will allow them to remain in a large class with the other pupils and the results of segregating this class of individuals small though it may be, are most encouraging. To a limited extent this has already been done in Philadelphia and as a result the school for backward children has developed, which has been of great value in educating these individuals who have heretofore remained in statu quo in the regular public school. Medical inspection has already in the few years of its existence done much for this small but constantly increasing group of unfortunates, to whom the state owes an education but who are individually incapable of receiving it when placed in close competition with the normal child. The question of handling these defectives is a serious and a large one and except for their detection in the school and recommendation to their parents and teachers as to what should be done for them, bears no close relation to medical inspection per se.

In order to more clearly establish the cogent reasons for the wider recognition of medical inspection, one has to consider as but one of many reasons advanced, the effect of disease upon the future career; while of course medical inspection will not abolish disease among school children, yet it certainly will materially reduce the prevalence of the so-called school diseases and also reduce to a minimum the dangers of contracting contagious diseases. Physical defects among the pupils of the public schools are strikingly common, so much so, that this may well be made a dogmatic statement. In Newark during the first five months of inspection out of 5,585 children examined, 1,706 were excluded from school, the great majority on account of communicable diseases. In 10 months in Philadelphia 3,446 contagious and 2,430 non-contagious affections were observed, while Boston inspectors found in one year 4,023 cases of contagious and infectious diseases and for the year 1900 out of 15,573 school children examined, but 4,952 were found free from disease. Surely a remarkable showing, but one which can be found from time to time in the majority of schools in the larger cities.

While it is not possible to entirely eliminate all disease from the school, yet the mitigation, cure or better still the prevention of many of these physical defects is entirely within our reach. The defects all have a remedy and if the medical inspection of schools had its value fully impressed upon those in authority, more substantial gains would be made in the near future than have been made in the past in the dozen or so towns where this has been in more or less effective force. Regular and daily systematic medical examination by the physician is a demand made by the modern recognition of preventive medicine and its full significance is becoming more widely appreciated as its results become more apparent. Medical inspection means that the pupil and not only the educational system is being considered and its objects embrace a two fold measure, first, to reveal and correct insanitary conditions existing in the school which may act as predisposing or exciting causes of disease, and secondly, its functions are to detect disease and especially those of a contagious or infectious character. That the experience of those familiar with this subject has been unanimous in extoling its value not only in improving the hygienic surroundings of the school child, but in detecting many diseases which had otherwise remained undetected and especially in locating early cases of diphtheria, etc., certainly implies that it deserves the greatest attention. The value of inspection shows itself along numerous lines affecting the condition not only of the child but also the teacher, the parents and the community at large. It has proven to be an important factor in the education of children and especially their parents in matters relating to personal and home hygiene and it has directed the attention of health and school boards to improvements and reforms which before had not attracted attention. As stated by Kober it has proven of inestimable value and while figures show but a part of what has been done, yet the following give some idea of the prevalence of disease in the schools, which previous to medical inspection was entirely neglected or detected only after the illness was so marked that it was apparent to the parents.

In Boston, from November 1, 1894, to October 31, 1896, out of 23,207 pupils examined there were 6,571 cases of disease and of these, 5,818 were too ill to be in school. The total school population at that time being 83,303. In three months in New York 4,183 children were excluded from school on account of contagious diseases, out of 63,812 examined. During a period of four months in Chicago 233 public schools were visited by the inspectors with the result of finding 1,417 cases of diphtheria and 306 of scarlet fever, while at a later period in the same city out of a school population of 200,000, 76,805 were examined and 4,539 were found to be suffering from contagious diseases, necessitating their exclusion from school. Noticeable among the results obtained in those schools where medical inspection has been enforced, is the improvement in cleanliness of the children and it has been especially noticed that the parents are more apt to keep ill children at home where previously they were sent to school, thus giving earlier attention to the sick child and at the same time in case of contagious disease a greater degree of security is afforded to those children who are at school.

In order to have a successful system of medical inspection and to obtain the best results, organization is essential. While good results have been obtained where the inspectors are under the direct control of the board of education, yet the inspectors under such circumstances do not have the full legal control over some of the problems that are constantly presenting themselves and in order to insure the best results both for the children and the community at large, the inspectors should be banded together as a definite organization under the board of health. In other words the inspectors in case of contagious and infectious diseases should act as agents of the health board, with all the power of that board behind them, while in the case of other affections they can have but the power to recommend that the child requires treatment and if necessary should not be allowed to remain at school until it has had such treatment. If the system of inspection is contemplated in a small town one or two inspectors will be fully able to cover the field, while in a large city a number are required depending upon the number of schools, of scholars and the relative distance between the school buildings. In Salt Lake City and Cleveland a single inspector performs the duties, but this hardly embraces medical inspection to anything like a complete degree and in these cities more attention is paid to school hygiene and the examination of the eyes and ears of the scholars, while in Philadelphia under an incomplete system 200 physicians visited the schools daily. The number of inspectors in other places varying with the number of schools and the thoroughness with which the authorities desired the work to be carried out, New York having 250 inspectors; Boston about 50, Milwaukee 12 and Newark 12, while in the few other cities where inspection is carried out, the number varies considerably. In organizing a system of inspection, it is essential that there should be a Chief Inspector who should possess both the qualifications of physician and sanitarian and who also should act as an official of the health board. The inspectors should form an organization having for its objects the promotion of an esprit de corps; the discussion of subjects relating to the inspection of schools and the various measures to be employed in eliminating disease and insanitary conditions therefrom. Such an organization in Philadelphia was productive of an immense amount of good and the inspectors composing it published a report of the work done for a certain period of time in which it did much towards instructing the school authorities and the general public of the value of inspection. In Boston also, an inspectors' association has been formed and is presided over by the chairman of the Board of Health, while in addition to the subjects discussed as mentioned above, addresses by specialists are given from time to time on diseases of the eye, ear, nose, throat, etc.

The duties of the inspector commence with the time of his daily visit to the school; usually he is expected to make his morning visit between 9 and 10, thus giving the teacher time to note those who appear to be ill and have them ready for the medical examination when the inspector arrives. A partial or complete diagnosis if possible may be made of the various cases, but unless the disease is clearly of an infectious or contagious character, it is usually advisable to send the child home with the advice to the parents that it requires medical attention. In case the disease is infectious or contagious, the child should be sent home immediately; in case of doubt (diphtheria) a culture should be taken and in addition to notifying the parents, the proper health officers should also be advised promptly, either by postal as seems to be the method mostly in use or better by telephone. Under such circumstances if several cases are found he should visit the several class rooms in the school building, paying special attention to the one from which the suspected case or cases originated and examine every pupil, making cultures from those who present any evidences of sore throat. From time to time tests should be made for defects in sight or hearing and careful attention should be paid to pupils who present any evidences of ill health chronic or otherwise, or who by mouth breathing suggest nasopharyngeal trouble. Once a year at least, the inspector should examine all children irrespective of a physician's certificate, as to the presence or absence of a well-marked vaccination cicatrix, but under no circumstances should he suggest any treatment or in any way interfere with the family physician. Under the volunteer system which is usually first adopted as a trial measure, the inspectors can hardly be expected to perform more duties in the school than those mentioned, but when the inspectors are paid and act as agents of the board of health as should be the case, they should also visit the class room daily and inspect the surroundings as related to temperature, desks, toilet rooms, etc., and exercise in general a sanitary supervision over the school in all ways that relate to the health of the pupils. The inspector then recommending to the chief inspector the removal of such defects that may be found prejudicial. Acting as an agent of the board of health he should also visit cases of contagious diseases when the family physician reports their recovery and should raise the quarantine and furnish the permit to return to school, this of course being limited to contagious diseases, as he has no control over other diseases outside of the school. In addition to notifying at once the health authorities, the teacher and the parents of the presence of a contagious disease, he should also send to the chief inspector a daily report of all children excluded from school and a weekly report including a complete list of the pupils examined and of those presenting any evidence of disease.

Necessarily only the general principles involved in the duties of the inspectors can be mentioned here and in each city or town these must vary in detail to suit the conditions present. In New York for instance, the diagnosis of measles or scarlet fever made by the school inspector must be confirmed at the home of the child within 24 hours by one of the diagnosticians of the Board of Health; while in Boston the inspectors visit at least twice, every case of infectious disease in their district; decide when isolation may cease and for disinfecting the premises. In Chicago daily reports are made of all cases examined and excluded, both to the Superintendent of Compulsory Education who has control of the system of inspection and to the Commissioner of Health; while in emergencies as outbreaks of diphtheria, scarlet fever, smallpox, etc., the report is made immediately over the telephone. As the inspection has been made here with reference to transmissible diseases only, the pupils are referred to the inspector by the school principal for two causes, first, those with suspected contagious diseases and secondly, those who have been absent for four or more consecutive days. Children with severe attacks of tonsillitis are also excluded until culture shows a negative diagnosis and a very wise measure is in force requiring aseptic methods of examination to be employed.

The chief inspector who should undoubtedly be an official of the health board and also act in harmony with the educational board, should exercise a general supervision over the medical inspectors, should receive and file daily weekly or monthly reports from the inspectors and should report to the educational board with his recommendations, cases of various diseases and instances of faulty hygiene which come under his attention. In addition he must take an active part as a health officer in enforcing quarantine laws in contagious diseases and should in general exercise such functions as are common to the position of health officer with in addition, special authority as relating to the hygiene of the school and its diseases.

Where for erroneous arguments and lack of fiscal appropriations daily inspection is apparently not feasible, the inspections may be made biweekly or weekly as is done in Jersey City, or as in Salt Lake City where they have but a single inspector who investigates contagious diseases after they have been reported. Of course it is impossible for one man to exercise medical supervision over a large number of schools, but even by this method in lieu of a better, much good can be accomplished in detecting eye and ear defects and improving the general sanitary surroundings of the pupils. Again medical inspection of the schools may be made only at the beginning of each school term or session of school after a vacation, but this bears no relation to the results obtained by daily inspection and enables the inspector to detect ills that may be present at intervals too infrequent to be of value in combating communicable diseases. The results shown by irregular inspection in contradistinction to daily inspection, have been utilized and are of value in organizing preliminary investigations to determine whether a given place required daily inspection or not. One or more volunteers if possible depending upon the number of school children, will be usually sufficient to demonstrate the value of inspection and will be a great aid in paving the way for a permanent system. Such preliminary investigations as conducted in Chicago by nine inspectors of the health department for more or less regular periods of the school year and based upon physicians' notifications, located 4,023 cases of contagious and infectious diseases; 47,310 vaccinations or revaccinations were secured; an epidemic of impetigo contagiosa involving seven schools was arrested in a few weeks after excluding 107 cases and a vast number of ills and sanitary errors were detected by this small force, that immediately paved the way for the necessity of inspection as a definite part of the sanitary system of the city. Similar preliminary investigations were also made in New York and it was found on examining the list of children absent from school that many cases of diphtheria passed unnoticed, while such was also the case in scarlet fever though to a less degree. So convincing was the evidence accumulated especially in regard to early detection of contagious diseases and the suppression of incipient epidemics, that a chief inspector and a staff of 150 later increased to 250, were appointed as a necessary sanitary measure.

An important factor and one which while not especially concerned with contagious diseases but which is of much import to the individual, is the necessity for medical examination of the child on its first entrance to school. This does not imply that no future examinations should be made after the first at usually an early age, but the pupil should yearly be investigated in regard to the special senses and for any physical ailments that may be observed by the teacher from time to time. With such a basis as the first examination of which a record is preserved and added to from time to time as the child progresses in his school work, a decided advance will be made in preventive medicine. Usually the educational system determines the standing of a child by his mental powers alone, but such a method is in no wise fair to the individual or the state, as children bright mentally but with undiscovered physical defects make their way rapidly through the prescribed course, some to break down when partially through, while others complete their studies at the expense of their physical welfare and either require a long time to recuperate or always bear the result of their education as physical ills. Medical inspection has done much in a limited field to negative these harmful results and as its field broadens it will do much more, while if carried out so that special examinations are also made of new pupils, much will be done toward having the system fit the child and not the reverse as is commonly the case.

While nearly all the diseases common to childhood have been found in the schools by the investigator, yet any accurate statistics as to the proportion of ill school children to those healthy, seems to be unobtainable. Various estimates have been made from time to time but they are usually based upon observations made in foreign schools and relate more to defects of the special senses with trivial nervous disorders, with little regard to the important group of communicable diseases and therefore have but little value if applied to school diseases in this country. From medical examinations made in various American cities, it seems to me that a fair and safe estimate of morbidity in children at school and not children sick at home whose names are on the school list, would be about 10 per cent. Probably 11 per cent. are in school suffering from some physical defect or illness interfering with their work, while nine per cent. will be found not too high for those who are too ill to study and require medical treatment. Scattered reports obtained now and then from the cities where medical inspection exists would also seem to bear out the accuracy of these figures, while as bearing out this point the following figures are suggestive; 30,045 children were examined in Cleveland in 1899-1900 and 6,221 or 20.7 per cent. were found to have defective vision, while in a single school 23.5 per cent. of the pupils had defects of the special senses and the inspector of Malden found 200 pupils requiring medical attention out of 528 examined. The reports obtained at Boston are instructive in this connection as in one year 1,156 were found too ill to remain at school, out of 8,964 examined. In one week in New York, 195 cases of communicable diseases were found, another week 7,398 were examined and 364 were excluded, while for still another week out of 4,598 examined, 243 were too ill to remain at school and in the first three months of the inspection during which 63,812 pupils were investigated, it was found that six per cent. had to be excluded for contagious diseases. In Minneapolis out of 25,696 pupils examined 8,166 or 32 per cent. had defective eye sight; nine months examination in Philadelphia showed the presence of 5,876 cases of disease in the schools, of which 3,446 were contagious. Surely these figures imply that we do not have to go far to find foci of contagion when an active field is found in every school, without at all taking into consideration the large number of school children who have diseases not transmissible.

Probably the chief value of medical inspection is the immense service that it has rendered in checking the spread of contagious diseases and therefore preventing epidemics or endemics. It certainly stands to reason that there is much less danger of a child contracting diphtheria, scarlet fever or measles for instance if another child with any of these affections in close contact with it in school is immediately removed at the beginning of the morning session, instead of remaining for the better part of the day. Without medical inspection in some form, such a condition has in the past and must in the future inevitably exist until the ill child becomes so sick that attention is of necessity directed to it. With inspection, this most common method of transmitting diseases becomes to a great degree obsolete and an advance will necessarily be made in preventing epidemics of such diseases as are common to the school age. I believe we have no better single factor in preventive medicine both in its fullest sense in preventing disease and also in the early detection of a large and serious group of affections, than the adoption of this measure. It is a matter of daily occurrence to have a school closed here or there on occount of an endemic of diphtheria, etc., yet the detection of the first case which is usually in school, or whose brothers or sisters have attended school during the early stage or as does happen, during the better part of the course of the disease, is but necessary and the dangers are reduced to a minimum or entirely removed. In New York a marked check has been noted from time to time upon the spread of contagious diseases, while a committee of Philadelphia inspectors as a result of a year's daily experience in the schools, felt warranted in stating that epidemics have been averted by the early detection and exclusion of many of the cases and that large numbers of children have been saved from unnecessary illness by detaining from school the sick, the uncleanly and the vermin ridden. Arnold has probably demonstrated the value of medical inspection most clearly in its relation to epidemics, where in a class of 40 pupils, 14 were affected by diphtheria and four children in the families of these were also affected. As soon as the epidemic was recognized four suspicious cases were sent home and recommended to the care of the family physician, while every throat in the entire class was examined and a culture taken in all suspicious cases. The usual precautions were observed in the class room as regarded disinfection, etc., and for a week and a half the throats of all the children present were examined every morning, no pupil with suspicious symptoms being allowed to return until the culture showed a negative report. Notwithstanding that the epidemic had progressed to such a degree before it was discovered, as a result of these measures no further cases were infected. The same author also reports a similar epidemic of scarlet fever in which the value of medical inspection was amply demonstrated, while the president of the Board of Education of Chicago in his annual report for 1901, states that the schools were saved from an invasion of smallpox by the vigilance of the medical inspectors, etc., and that since its introduction its efficacy has been apparent from the large number of contagious diseases which have been detected and excluded.

The triple question does medical inspection act as a check upon the spread of contagious diseases? Does it protect against epidemics arising among school children? Does it prevent the infection of others? can be answered in the affirmative by the statement made in the report just quoted, that in one year 5,217 cases of contagious diseases were detected and excluded. In other words, in but one city—Chicago—5,217 cases of epidemics were detected and rendered ineffectual for harm. The Commissioner of Health of Milwaukee states that it is hardly possible to estimate the amount of good that has been accomplished in eliminating cases that were in an infectious stage and thus placing them in quarantine and under proper medical supervision. As an aid in discovering the source of an endemic, or epidemic of these diseases, this system presents somewhat unique features, as the cases are discovered much earlier than they have been without it and by tabulating the cases found it can be seen in what locality they are most numerous, thus following the disease to its original source. Indirectly the inspection of schools has had a most curious and yet salutary effect in showing to the public the necessity for isolation in contagious diseases. This has been noted in various places but in Salt Lake City previous to the partial inspection in force, it was common for the household to scatter between the time of making the diagnosis and the establishment of quarantine, thus increasing the dangers of the spread of the infection. Since, however, this work has been carried on in the schools, the Commissioner of Health has stated that there has been a marked improvement in this respect as in the voluntary reporting of mild cases of contagious diseases. Wherever a number of children are brought into close contact the dangers of dissemination of various diseases must be materially increased and as this is true upon all occasions, it is necessarily so in regard to schools. Efforts are being made of which this is one, to lessen the size of the class and this will of course lessen to that extent these dangers, but notwithstanding this and even granting a model hygienic place of meeting, yet the children come from without and while under such ideal conditions the dangers of contagion are greatly lessened, there remains the fact that as long as contagious disease exists the school must remain an important factor in its dissemination. Medical inspection here finds its especial field not so much in this aspect of being able to keep the surroundings such that disease is kept out of the school, but by detecting and removing individuals with communicable diseases which act as a focus of infection by bringing the disease from the home or street. Another factor which determines the dissemination of communicable diseases, is the necessity of bringing the pupils into close contact within a comparatively small space. This is especially so in the kindergartens and lower grades where the children play certain educational games together and are in many ways through this influence, more likely to acquire contagious diseases than are those in the higher grades. The same thought may also be applied to the fact that the school child is of a susceptible age in regard to contagious diseases, the tendency being greater to contract these affections during this time than at other periods, so that while these factors in themselves cannot be changed even by the most ardent disciple of preventive medicine, yet the dangers of increased susceptibility under such conditions can be reduced to a minimum by the measures which are here advocated.

(To be Continued.)

ORIGINAL ARTICLES.

THE ETIOLOGY, PATHOLOGY AND SYMPTOMATOLOGY OF ACUTE SUPPURATION OF THE MIDDLE EAR.[*]

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AN acute middle-ear suppuration is invariably caused by the introduction of some pathogenic germ into the tympanic cavity. This germ gains entrance either through the external auditory meatus, there being a solution of continuity in the drum membrane, or through the Eustachian tube, the drum membrane remaining intact. In addition to the introduction of the pathogenic germ, certain conditions of the middle ear must be present which render this region a favorable site for the development of the pathogenic germ introduced. In other words, the diseased organism which gains entrance to the middle ear is the exciting cause of the inflammation. The changes which make the middle ear a favorable nidus for the development of this germ, constitute the predisposing causes of such an inflammation.

Turning now, to the predisposing causes of an acute middle-ear suppuration, we would cite, in the first instance, any condition which conduces to a chronic congestion of the upper air tract and of the tympanum. These two regions are so intimately related anatomically, that a venous hyperemia in the one cannot fail to produce a corresponding condition in the other. Such a predisposing condition then exists whenever we have an obstruction to nasal respiration such as is caused by a chronic hypertrophic rhinitis, an acute rhinitis, an acute inflammation of the nasopharyngeal space, or an hypertrophy of the lymphatic tissue situated in this region, constituting the condition commonly known as adenoid vegetations, or enlargement of the pharyngeal tonsil. These may be considered as the local predisposing causes. The general predisposing cause which, without any lesion of the upper air tract may render the middle ear exceedingly susceptible to infection, may be any constitutional condition which lowers the vitality of the entire system. Among the chronic diseases, we may mention chronic cardiac disease, chronic nephritis, anemia, either simple or pernicious, diabetes, and so forth. Among the acute diseases, we may have pneumonia, diphtheria, and the exanthemata; all of these conditions, tending to lower the general nerve vascular tone of the body, render all regions more susceptible to any infection, and the middle ear does not escape this general predisposition.

Next we come to the direct or exciting cause of the inflammation, that is, the means by which the pathogenic bacteria are introduced into the tympanum. The most simple avenue of introduction, and at the same time perhaps one of the most unusual, is through the external auditory meatus. This etiological factor is operative in those cases of acute middle-ear suppuration which follow any perforating wound of the membrana tympani. We all know that in healthy individuals the membrana tympani may be perforated accidentally, and, in a very large proportion of cases, unless an effort is actually made to introduce some pathogenic germ, such an injury is frequently not attended by suppuration. Given any of the predisposing causes already enumerated, however, and a wound of the drum membrane will almost invariably be followed by a purulent inflammation. This fact is of importance, clinically, in dealing with cases in which permanent perforation of the drum membrane exists. In these cases, an acute purulent inflammation not infrequently occurs as the result of neglect, either on the part of the patient or of the surgeon, through the actual introduction of septic material through the meatus.

The middle ear is most commonly infected through the Eustachian tube. Bacteriological investigation of the secretion from the nasopharynx in healthy individuals almost always shows the presence of a certain number of pathogenic bacteria.[*] The investigations of Preysing would seem to show that under normal conditions the tympanic cavity contains absolutely no bacteria of any description. Hasslauer[†] on the contrary, in a series of similar investigations has apparently proven that the tympanic cavity frequently contains various forms of bacteria, such as the diplococci pneumococci, staphylococci, Friedländer's bacillus and occasionally streptococci. These investigations are cited simply to prove that, given a normal mucous lining of the middle ear, pathogenic bacteria may be present not only in the nasopharynx, but may even exist in the middle ear itself, without causing a suppurative inflammation. Given, however, one of the predisposing causes already mentioned, together with the presence of these pathogenic organisms, even in small quantities, and a purulent inflammation results.

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[*] Read before the New York County Medical Society, Sept. 22, 1902, being the first paper of a symposium on this subject.

[*] Centralblatt f. Bakteriologie, "Die gesunde menschliche Paukenhöle ist keimfrei," 1899, vol. 25. p. 535. (1. Abtheilung.)

[†] Klinische Vorträge aus dem Gebiete der Otologie und Pharyngo-Rhinologie, Nov., 1901, p. 177.

Time does not permit of my going further into the etiology of the condition. It will easily be seen, if the preceding remarks have been followed, that an acute suppuration of the middle ear must necessarily be a not infrequent complication of any acute infectious disease, particularly of those diseases in which pathogenic germs are found in large quantities in the nasopharynx. I here refer to measles, diphtheria and scarlet fever. From a clinical point of view, one of the most common etiological factors is the direct introduction of pathogenic germs through the Eustachian tube by the insufflation of water through the nares. This occurs most frequently as an accident during bathing, but may follow the use of the nasal douche, too often, I am ashamed to say, advised by the medical attendant. Here, again, the predisposing factor plays an important part. It is probable that in many instances, water that is not perfectly sterile has entered the middle ear, and has failed to cause any inflammation whatever. This accident, however, if associated with one of the local predisposing causes already mentioned, is almost certain to be followed by serious consequences.

Turning now to the pathology of the condition, we find that whenever we have purulent inflammation of the middle ear, this inflammation involves the upper portion of the tympanic cavity, that is, that portion of the middle ear lying above a horizontal plane passed through the short process of the malleus. This region contains numerous reduplications of mucous membrane which pass between the bodies of the ossicula and the adjacent tympanic walls. A suppuration in this portion of the tympanic cavity is always purulent, and invariably indicates that the infecting germ is of sufficient virulence to attack connective tissue. This, in contradistinction to an acute catarrhal inflammation, which is always limited to the lower portion of the tympanic cavity, a region but poorly supplied with connective tissue. We may frequently have an acute catarrhal inflammation of the middle ear which may run its course without producing a suppuration. Even in those cases which go on to rupture of the drum membrane, the discharge is sero-mucous in character, and disappears in the course of a few days. An examination of this discharge invariably shows that the pathogenic organisms are of the milder variety, such as the staphylococcus or some of the less virulent form of diplococci. When we have to do with a streptococcus and, in a great majority of cases, with a pneumococcus infection the upper part of the cavity is almost always involved. It should also be remembered, in considering the pathology of the condition, that a simple acute catarrhal otitis, in which the infective germ is of low vitality, or in which the bacteria are only present in small quantities, may easily be transformed into an acute suppurative otitis media, involving the upper portion of the tympanic cavity, unless proper measures are taken, such as keeping the parts absolutely sterile to prevent any infection from without. We see this especially in hospital practice, where the patients are not as cleanly as they might be. A patient, presenting at first with an acute catarrhal otitis media, will appear later on with this transformed into an acute suppurative otitis media, involving the upper portion of the tympanic cavity, the change in the case being entirely due to infection of the middle ear through the external auditory meatus.

I have dwelt so long upon the etiology and pathology of this condition, that I have but little time left in which to speak of the symptomatology. Fortunately, but little need be said upon this subject. The first symptom of which the patients complain is a feeling of stuffiness in the ear, quickly followed by actual pain. This pain, in a suppurative otitis, increases rapidly until it becomes agonizing and almost unbearable. In addition to the pain, the patients usually suffer from subjective noises, impairment of hearing, and there may be vertigo and vomiting. There is also, in most cases, an elevation of the body temperature. In adults, the temperature ranges anywhere from 99° F. to 101° F.; in children it frequently rises to 104° F. or 105° F., or even 106° F. The symptom of greatest importance in infants is undoubtedly this sudden increase in temperature. Given the case of a child suffering from one of the exanthemata in which, after the appearance of the eruption, the temperature has run its characteristic course and fallen to nearly the normal standard: suddenly, without any apparent cause, the temperature rises three or four or five degrees, and the infant seems a little restless. Such a condition should always lead to a careful examination of the ears, knowing, as we do, that this portion of the economy is exceedingly prone to be involved during the course of one of these acute constitutional diseases.

COMPLICATIONS OF ACUTE MIDDLE-EAR SUPPURATION.*

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SINCE the subject-matter involved in the title of this paper is sufficiently extensive to fill a volume of considerable size, it will be quite impossible to attempt more than to mention those sequelæ that are apt to occur in the course of this disease, and which often form a part of the general practitioner's experience.

The consequences of an acute otitis limited to the auricle and auditory canal assume quite a number of pathological changes. Chief among them is the Otitis externa, or diffuse inflammation, which extends over more or less of the cutaneous surface of the auditory canal and in severe attacks involves the auricle as well. When the inflammation is very intense, the periosteum lining the osseous canal is implicated in the morbid process, which adds to the suffering of the patient, and produces a partial or complete closure of the canal. The presence of this condition not only interferes with making a satisfactory examination of the ear drum, and offers an obstruction to the performance of a successful paracentesis, but in addition, closes the natural outlet for middle ear drainage. It is sometimes very difficult to distinguish between otitis externa and middle ear inflammation when the swelling is limited to the inner part of the canal. The inflammatory process, when of mild character, ends in resolution, still it often passes on to exudation and exfoliation, then the process gradually abates.

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* Read before the County Medical Society, Sept. 22, 1902. Second paper of Symposium.

Mastoid periostitis is frequently observed as a result of middle ear suppuration. When we study the development of the temporal bone and grasp the variety of conditions it presents at various ages of life, the occurrence of this complication, particularly in babies and young children, ceases to be much of a problem. In the young we find that the mastoid antrum is separated from the overlying soft parts by a very thin layer of bone richly perforated by various channels, along which inflammation may readily extend; then the fissures or sutures which remain open until puberty and sometimes never completely ossify—the squamo-mastoid fissure being the one in this region—form a pathway which facilitates the rapid extension of inflammation from the internal to the external mastoid cortex. In such a manner large collections of pus may form behind the ear before the membrana tympani ruptures, showing that the pus has followed the path of least resistance. More or less pain ushers in an attack which is followed by redness and swelling of the soft parts above and behind the auricle. The auricle soon takes the characteristic position of being pushed forward and downward almost at right angles to the skull. The extent of surface involved by an abscess may be limited to the mastoid region or reach from the tissues in the neck to the vertex. Occasionally we find inflammatory diseases limited to the soft parts of this region which are quite independent of any previously existing otitis; therefore a careful inspection of the ear drum is necessary in all cases before a correct diagnosis is possible.

Inflammation of the mastoid cells is most apt to occur as a complication when there is delayed perforation of the drum, insufficient drainage, and an impermeable Eustachian tube. This subdivision of the ear is the natural outlet of the tympanum, but through an early participation in the inflammation its tympanic mouth is tightly closed, and unless there is an artificial outlet made for the purulent accumulation, the anatomical relations of the tympanum, antrum and mastoid cells, offers an almost unobstructed path for its extension. One of the most reliable indications of a beginning attack of acute mastoiditis, is the persistent excruciating pain. Tenderness on pressure over that part of the mastoid known as the antrum, and over the tip of the process, associated with more or less swelling of the soft parts, are generally present. Fever in children is usually pronounced in the early stages, while in adults its exclusion does not necessarily indicate an absence of the disease. Symptoms of septicemia are by no means rare, and delirium, when present, does not mean a fatal issue. Obliteration of the posterior auricular fold is a symptom usually indicative of mastoid periostitis, which, when following an attack of middle inflammation, demonstrates the presence of inflammation of the mastoid cells. All signs of mastoiditis, except pain, may be absent and it is usually encountered in those cases where the cells have become obliterated through some prior pathological process. A sinking of the upper posterior auditory canal is considered either a reliable symptom of mastoid empyema, or, inflammatory activity located within the mastoid antrum.

As a result of continued pressure of pus within the tympanum, there may be destruction of the soft parts here and there, which ultimately leads to superficial caries of the osseous structure, and one of the anatomical divisions frequently seen to suffer in this way, is the Fallopian canal. While facial paralysis is generally observed as a result of long standing inflammation, occasionally more or less paralysis follows in the progress of an acute otitis. This complication is most often seen in young children where there is a lack of osseous development of the Fallopian canal, thereby making inflammatory extension to the exposed portion of the nerve comparatively easy.

Adenitis of the cervical and post-auricular glands is often seen as a complication of acute otitis, but it rarely extends beyond the point of producing some degree of tenderness. Where the mastoid is extensively involved a true suppuration of the glands may follow. This is especially true in the tuberculous and strumous diatheses.

Retro-pharyngeal abscess as a result of purulent inflammation of the tympanum, may occur through an extension of pus into the Eustachian tube, which is apt to induce dysphagia and dyspnea.

Although the proportional occurrence of intracranial inflammation following acute middle ear suppuration has not as yet been definitely determined, its frequency is no longer a matter of speculation. The construction of the temporal bone with its many cavities and intercommunicating air spaces tends to favor the retention and decomposition of pus, and its intimate relation to the other component parts of the skull, permits the various pathological micro-organisms easy ingress not only to the cranial cavity, but to all parts of the economy through infection of the large venous channels lying in close proximity. The routes by which the inflammation is most apt to extend, are, by the tympanic roof and the inner posterior wall at the concavity for the sigmoid sinus. Septic material easily penetrates and extends along the many apertures for blood vessels and lymphatics that richly perforate the bone in all directions, while the unossified condition of the petro-squamosal fissure, through which a fold of dura mater passes and lies in direct contact with the mucous membrane of the middle ear, often leaves no effectual barrier to check the inflammatory advance, no matter what its nature may be. Although it is generally conceded that the greater number of cerebral complications follow the chronic form of middle ear suppuration, the danger and widespread infection from acute suppuration is becoming more widely recognized. There is more or less of a localized meningitis in nearly every severe case of acute otitis suppurativa in young people, which, fortunately, rarely develops into a general basilar meningitis, although a lack of proper treatment at the right time may aid it in becoming so. The presence of carious bone is more dangerous to the durn than the open condition of the sutures, for these bone defects are often so firmly closed with fibrous tissue that an excellent protection is thereby afforded to the overlying meninges. I believe it was Brieger who reported a number of sections made on the temporal bone in cases of acute otitis where the sutures were found to be protected in this way, and in no instance was there any indication of the purulent process entering the middle cerebral fossa. While this result is remarkable, and seemingly somewhat accidental, it nevertheless offers an explanation why inflammatory extension is so rapid in some cases and so slow in others, as this anatomical condition is by no means a constant factor. Meningitis, inflammation of the lateral sinus, and extradural abscess, are the critical complications apt to follow severe attacks of acute middle ear suppuration, although much may be accomplished in the early stages of the otitis to prevent their development. Rapidity of inflammatory extension is nearly always seen in the cases of influenza infection.

In conclusion let me say, that in all obscure diseases of children, repeated and careful examinations of the ear should never be neglected, for the excellent work of Ponfick, who made 100 autopsies upon infants dying of various acute and chronic diseases, wherein the majority of the cases, middle-ear inflammation was not suspected, showed nevertheless, that it was present in all but nine of them. He believes therefore, that the tympanum acts as an incubator and generator, promoting toxic symptoms in localized infective diseases. Pomroy, of Boston, has verified this observation in a very able paper.

Mouse Baiting.—Society in Stamford, Conn., seems to be much wrought up over the opposition to its miniature bull fight performances. It would be an interesting matter to know how many anti-vaccinationist's and other anti's are represented.

THE TREATMENT OF ACUTE SUPPURATION OF THE MIDDLE EAR.

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In the brief time allowed for the presentation of this paper I shall attempt only to make a few practical statements outlining the present status of the treatment of acute middle-ear suppuration. A patient who is undergoing an acute suppurative process in the middle ear has, pent up in a bony canal, a quantity of septic material which usually finds vent by way of the tympanic membrane, but which may at the same time find access to other, near by and connecting bony cavities often resulting in serious and, sometimes, fatal complications. Even in the simplest cases patients present the symptoms of sepsis as indicated by rise of temperature and rapid pulse. It is therefore of the utmost importance that these patients should be placed in bed, and remain there from the very commencement of the attack until the more acute symptoms have passed away. It is not customary to consider such patients ill enough to be so confined, but it should not be forgotten that a severe septic inflammation is in progress with elevation of temperature, rapid pulse and excruciating and exhausting pain. Confinement in bed aids greatly as an abortive measure as well as giving proper rest and protection from cold. Preventive treatment may be further outlined by referring to the many and varied opportunities for forestalling the attacks. There are certain diseases and diseased conditions which surely predispose to them.

First and foremost is the presence of adenoid tissue in the vault of the pharynx. This tissue is a hotbed for the retention and development of infection and the victims are constantly menaced by the entrance of septic material into the open doors of the Eustachian tubes. Indeed, adenoid patients actually do have "running ears" in far larger proportion. It is obvious that all adenoid patients should undergo operation but especially is this true in one who has had even a single attack of middle-ear suppuration.

Ear complications of grippe can generally be prevented by careful treatment of the nose and nasopharynx at the very commencement, and, during its entire course cleaning and detergent sprays, in fact, any treatment which tends to render these tissues clean and free from secretions, may be resorted to. Added to this the patients should be cautioned to avoid violent blowing of the nose—a procedure which, no doubt, often effects the introduction of infected material into the middle ear. Ear symptoms of more or less severity nearly always accompany the exanthemata, especially scarlet fever and measles, and suppuration often results.

That much may be done to prevent such suppuration, and that but little is actually done by practitioners seems to be a fair criticism. During a recent season when measles were prevalent the writer took pains to learn how much even our best and most skilful physicians attempted in the way of prevention of middle-ear suppuration. These observations led to a belief that during the early stages of the exanthemata rarely any attempt is made to cleanse the nose or nasopharynx of surplus septic secretion. These patients should receive the very same care as that already recommended for grip. Almost any detergent non-irritating alkaline spray will serve the purpose. A tablet made up of sodium salicylate, sodium bicarbonate, boric acid (aa gr. iijss), oil gaultheria, q.s., dissolved in one ounce of sterile water, has been found to be almost without irritating qualities. This tablet was devised and first used at the Manhattan Eye and Ear Hospital and in that institution is called the Manhattan tablet. Free purgation, preferably by means of calomel, is a most helpful clinical adjunct, especially when administered at the very commencement.

For the relief of the excruciating pain during the time previous to the establishment of the discharge, not much can be accomplished, aside from the use of heat and narcotics. If examination of the drum shows clearly that no pus has yet formed, the canal should be irrigated with large quantities of hot sterile water at half hour intervals. A large douche bag hung high enough to give sufficient force to the stream is probably the best method for hot water irrigation. The temperature of the water may be from 100° to 110° F. Added to this should be the internal administration of some form of narcotic which will be far less harmful to the patient than the prolonged excruciating pain. Such remedies as hot oil and laudanum, the heart of an onion and a long list of similar ones are only mentioned to be condemned for obvious reasons. If the discharge has not actually commenced and the tympanic membrane is bulging or otherwise giving evidence of the presence of pus in the cavity, a free incision should be made. It requires some experience to make this incision properly but incision is preferable to puncture. Such incision should be made under strictly aseptic surroundings and it should be carried not only through the membrane proper but upward through the attic region and well out on to the wall of the canal. This serves to open freely both the tympanum and attic, and also to bring about a free flow of blood, thus greatly relieving the congestion. Many serious results may be avoided by resort to early incision.

Treatment during the attack.—After the discharge is established it is necessary to decide upon the course of treatment to be followed and in so doing we should not forget that the chief requirements are cleanliness and free drainage—and cleanliness should refer to the nose and nasopharynx as well as to the external ear and auditory canal. Time will not permit even a narration of various plans suggested in the books and writings of otologists. Frequent irrigation with a one to 4,000 sterile solution of bichloride of mercury, thoroughly cleansing the canal of all discharge, using one to two quarts at each treatment is perhaps the easiest and best method. This should be done every two hours. With young children it is necessary to use some force for the first few treatments but after a little they submit with good grace. For the past few months in the outdoor clinic of the Manhattan Eye and Ear Hospital I have been using formaldehyde solution in the same manner. Very careful instruction should be given to the mother or nurse as to doing this work thoroughly and at each daily visit the attending physician should give a complete treatment himself, wiping out all surplus secretions with a cotton probe and making a careful examination of the condition of the drum and the canal by means of reflected light. This procedure is necessary both for the benefit of the patient and also that the mother or nurse should see exactly how the work should be done. At each visit pressure should be made over the mastoid, especially over the antrum and tip, and the patient questioned, to discover if there be pain in this region. A small quantity of sterile gauze should be packed loosely in the outer part of the canal and changed as frequently as it becomes soaked with pus.

It should be the routine procedure in both private and hospital practice to make microscopical examinations of the pus in all acute cases of middle-ear suppuration. Such examination should be made as soon as possible after the establishment of the discharge. The predominance of certain organisms, especially those accompanying grip and the exanthemata becomes of importance when complications arise. It has been fully demonstrated that when the more virulent organisms predominate serious complications are more liable to arise. When mastoid involvement occurs during the course of middle-ear suppuration one's judgment is usually subjected to a severe test. The very early symptoms may be, and sometimes are, relieved by measures other than external operation. Free incision of the drum membrane as heretofore indicated may be sufficient. In fact the whole theory of such relief is based upon the importance of free drainage. So that even when the antrum itself is involved the danger of further involvement of the mastoid cells may be avoided by establishing such drainage. This, together with local blood-letting by means of real or artificial leeches and the application of either the ice coil, or as some prefer, hot poultices and the hot douche about exhausts the list of abortive measures. Aside from the ice coil and the establishment of free drainage in the canal the benefits to be derived are at least meager. The great tendency is to make use of preventive measures for too long a time. The ice coil should not be used longer than 24 or 36 hours, after which time it may become a dangerous application on account of its proneness to mask the symptoms. Continued use of poultices is equally bad. In fact, any prolonged attempts to abort mastoid suppuration are to be deprecated. The patient, of course, should be confined to bed and should remain there until all mastoid symptoms have passed away.

While opinions may vary to a marked degree from operating at the very commencement of mastoid involvement to a delay which may lead to extensive complications, there certainly must be a period when operation should no longer be delayed. Prolonged tenderness upon pressure in the region of the antrum together with the bulging of the atticus tympanicus and the superior posterior wall of the canal constitutes sufficient reason for operative procedure, and especially so when the pus contains the more virulent micro-organisms. In other words external operation should be performed in acute suppuration of the mastoid cells when a permanent remission of symptoms has not been brought about by free drainage through the drum membrane, or by such local applicatios as have heretofore been described, and when this time has arrived there should be no delay. The majority of hospital cases and many of the private ones have already reached this stage before they come under the care of the otologists. Just when the exact time arrives may not be measured by days or hours. The date must be determined by the good judgment of those who have the patient in charge.

Many delays in operating come either from lack of willingness to consent upon the part of the patient, or his family, or from the extreme conservatism of the family physician. Conservatism is a quality not to be ignored, but when carried to the extreme it reacts to the great detriment of the patient. The same statement may be equally true when applied to radicalism. Indeed, it is quite possible for the conservative to be radical in his conservatism, and of the two it would seem to be preferable that one should be conservative in his radicalism rather than radical in his conservatism.

Another strong point in favor of early operation is the better hearing results to be thus obtained. Early operation usually will be followed by practically perfect hearing on the affected side. It must not be forgotten that pus pent up in the mastoid cells is in a position to seriously menace nearby vital structures. Not more important is it to remove the suppurating appendix than to open the suppurating mastoid cells.

General Treatment.—A very careful examination of the general physical condition of the patient should be made and the facts relating to his habits, digestive and eliminative functions should be ascertained and set right. The general or internal treatment may often be commenced during the suppurative period, so soon as the temperature becomes normal. The internal treatment should be just whatever the general condition of the patient seems to require. Iron, cod-liver oil, strychnine, iodide of potash, creosote and hypophosphites may be mentioned as most helpful medicaments. Freshly made syr. ferri iodide is mostly used in our large ear clinics. These tonics are to be given not only because of the general condition of the patient requires such treatment, but because such improvement in turn brings to bear a most helpful influence upon the suppurative process.

Conclusions.—(1) In acute middle-ear suppuration early and free drainage is of the utmost importance; (2) patients should remain in bed until acute symptoms have passed; (3) free purgation (preferably by means of calomel) should be resorted to; (4) microscopical examinations of pus should be made; (5) local treatment should consist of cleanliness and free drainage; (6) proper internal medication should not be ignored; (7) prolonged attempts to abort suppuration of the mastoid cells are to be condemned; (8) early operative interference in mastoid suppuration prevents the more serious complications and gives far better hearing results; (9) uncomplicated cases of acute suppuration of the middle ear, when properly treated, always recover in from two days to three weeks; (10) the responsibility for preventive treatment must be largely assumed by the family practitioner. He should fully appreciate the importance of preventive treatment when caring for grippe, the exanthemata, or other infectious intra-nasal conditions, and also, the early and complete removal of diseased adenoid tissue.

THE ETIOLOGY, PATHOLOGY AND SYMPTOMATOLOGY OF CHRONIC PURULENT OTITIS MEDIA.*

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The serious complications which appear during the course of chronic purulent disease of the middle ear, emphasize the importance of treating this affection with earnest consideration.

Chronic otorrhea is more prevalent than the general practitioner is apt to believe from personal experience. When we learn through a recent report† of an examination of school children, carried out by Arthur Cheatle, in London, that out of 1,000 children, 335 had discharge from one or both ears, the frequency of this condition is rather astounding.

Etiology.—In the majority of cases this disease follows an acute infection of the middle ear which has been neglected or improperly treated. Syphilitic and tubercular manifestations are the exceptions to this rule. The latter changes may progress insidiously without much local discomfort except for the loss of hearing and the presence of a purulent discharge. The previous history and a bacteriological examination will assist in excluding these systemic infections. Scarlet fever, measles and diphtheria are potent factors in causing middle-ear disease in early life, while influenza has in recent years been followed by severe and prolonged aural complications.

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*Read before the New York County Medical Society, Sept. 22, 1902. Fourth paper of Symposium.

†Journal of Laryngology, June, 1902.

Though much has been said and written upon the influence of nasal and post-nasal disease in aural disturbances. I cannot pass by this portion of the subject without mentioning the fact that my present experience certainly corroborates the observations recorded in my paper upon "Adenoids: A Contributive Factor in Aural Affections," which was read before the Pan-American Medical Congress in 1893.

We should examine the pharyngeal space in all ear cases, be they catarrhal or purulent inflammations, and we will often find the cause of a persistent discharge and other annoying symptoms. It is not uncommon to see marked improvement in such cases after the removal of a hypertrophied pharyngeal tonsil. These growths, by their presence, keep up a congestion of the adjacent tissues, and act as an obstruction to the pharyngeal and tympanic circulation. The recesses which exist between the folds of the lymphoid hypertrophy offer a suitable habitation for the generation of infectious bacteria. These find their way through the Eustachian tube and exert their deleterious influence upon the tissues in the middle ear and neighboring cavities.

Pathology.—Micro-organisms of a pathogenic nature are the important element in the production of purulent otitis. All the conditions favorable for their growth and propagation are found in the tympanic cavity, but we seldom obtain a pure culture of any germ from this chamber. The infection is almost always of the mixed variety, though the *Staphylococcus pyogenes* is probably the most constant. With the invasion of streptococci and pneumococci the inflammation assumes a more virulent aspect, and dangerous complications are liable to follow. The continued presence of either of the latter microbes lends additional weight to the importance of hastening surgical intervention in doubtful cases.

Moose has found that during catarrhal exacerbations the mucous membrane of the pharynx and middle ear becomes infiltrated with innumerable polymorphous cells, causing the membrane to become hyperplastic. There is no tendency to purulent disease under such conditions, unless a change occurs in the nourishment of these tissues. If the resistive power weakens, the micro-organisms rapidly increase in number, and infection results. The smaller the number of microbes, the less liability there is to pus formation. In children, the invasion enters through the Eustachian tube very early, as this channel is wide and short. In eruptive diseases, the circulatory and lymph vessels are apt to carry the infection. Hematogenous changes are inclined to become chronic in character, as the healing of the parts is more complicated.

In prolonged suppuration, the microscope shows that the drum and mucous membrane of the middle ear is hyperemic and hypertrophied, with round celled infiltration.

Schwartze states that this overgrowth invades the pneumatic spaces, and also imbeds the ossicles as it advances. In some places the epithelial layer of the membrane is thrown off and ulcerations exist. Owing to these changes, synechia form, and the ossicles, together with the tendons of the tensor tympani and stapedius muscles, become bound down.

If the inflammation continues granulations and polypi appear, and the periosteum becomes involved; the ossicles and bony walls are attacked by the round celled infiltration, and necrosis results, with dislocation of the bonelets and exfoliation of the adjacent bone. In this manner the attic, aditus and mastoid cells become affected. Fistulæ through the tegum tympani are formed and infection spreads to the dura and cranial cavities. Cerebral complications are consequently most frequently associated with chronic purulent disease.

If the path of infection extends through the posterior wall of the mastoid, sinus involvement and cerebellar abscess may result.

In some skulls the bony capsule of the jugular bulb stands out prominently along the floor of the middle ear, and may become diseased early in the course of a severe infection, causing a septic thrombus in this portion of the venous circulation.

In persistent purulent otitis, we find a loss of a portion of the drum membrane. At times, the entire membrane has been absorbed, and the remains of the ossicles may be seen hanging in the middle ear. When the secretion is small in quantity, it may form a crust over a small perforation, and the latter may be overlooked in a cursory examination. The position of the perforation assists in locating the disease. If the opening in the drum is situated in Shrapnell's membrane it usually signifies necrosis of the ossicles or involvement of the attic. As the incus is scantily supplied with blood vessels, it is the first of the ossicular chain to become diseased. It is only in long-standing cases that the posterior wall of the middle ear becomes affected, except in tubercular or other severe infectious inflammations. The folds of mucous membrane which line the upper portion of the tympanum become hypertrophied and so retard drainage, thus exposing the adjacent cavities to the infectious secretion. In this manner the mastoid becomes involved in acute manifestations, and we must bear in mind this anatomical feature, as these reduplications of membrane must be attacked when drainage is obstructed, consequently the bulging drum must be incised high up and deep, when mastoid symptoms exist.

Symptomatology.—Loss of hearing, with an intermittent or persistent discharge, are the most frequent symptoms of this chronic affection. A weeping eczema of the canal may give rise to moisture, without the existence of middle-ear trouble. If, however, the purulent discharge from the ear is acrid, the skin becomes macerated and a dermatitis results. Frequently the canal is secondarily infected, and a furunculosis develops. Such a lesion may so obscure our vision that the inner portion of the canal cannot be seen, and it is impossible to determine at the first examination whether the middle-ear suppuration is the exciting factor. The character of the discharge will at times indicate the presence of bone necrosis, especially if the secretion is greenish or foul-smeling. A bloody discoloration suggests the presence of granulation tissue or polypi, while a distinct blue tint is due to the *Bacillus pyocyaneus,* and also indicates bone disease. When the discharge is profuse and reappears immediately after our attempts to clean the canal, we should suspect a reservoir of pus in the mastoid process, or neighboring cavities, and must not hesitate to employ surgical measures. The quantity of the discharge is augmented by catarrhal changes, current diseases and trauma. A seemingly trivial otitis may suddenly assume an alarming aspect, and even terminate fatally in a rapid manner.

To illustrate the preceding statement I briefly mention the case of a young man, twenty years of age, who came under my care a year ago. His right ear had been discharging off and on for 10 years without much annoyance, except for some loss of hearing on that side and a slight amount of secretion. A week before I saw him he was struck over the ear by the fist of one of his companions. The same day, pain set in, and the discharge became profuse and bloody. A few days later, there was an offensive odor to the secretion and the pain radiated over the right side of the head. His temperature rose to 103° F., and chilly sensations appeared. Pressure over the mastoid and its tip revealed tenderness. The patient presented a distinct septic picture, so the mastoid was opened and found extensively diseased, together with thrombosis of the lateral sinus and internal jugular vein. The latter was ligated near the clavicle, and the sinus thoroughly curetted. Reinfection of the posterior portion of the sinus occurred, and two subsequent operations were performed in two weeks, and the sinus was found diseased toward the torcular. Fortunately the patient recovered, but the history of his case shows that a chronic suppuration may exist for 10 years without causing much inconvenience to the individual, until an exciting factor reawakens the slumbering sepsis to renewed activity. Pain is not a characteristic symptom in chronic cases, except during an exacerbation. It is then suggestive of further extension, and should be carefully considered.

It is not unusual to find marked destruction of the mastoid in this phase of the disease without distinct premonitory symptoms. Invasion of this process has followed the removal of diseased tissue from the middle ear due to disturbing nature's protecting zone of granulations. These accidents demonstrate the importance of careful asepsis in seemingly minor aural operation.

If during a purulent otitis, the patient experiences a chill or chilly sensations, with a sudden rise of temperature, we must at once suspect an extension of the infectious process, and think of the presence of pyemia, sinus thrombosis, meningitis and cerebral complications.

The dangers that lurk in a chronic discharging ear, cannot be too strongly impressed upon the public at large. Professor William Macewen has tersely remarked, "We cannot too often recall the warning that the virulence of an otorrhea cannot be measured by the quantity of the secretion, its odor, or the slightness of its initial symptoms, and that the pyogenic process may proceed insidiously until some accidental circumstance precipitates a dangerous or fatal crisis."

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COMPLICATIONS OF CHRONIC SUPPURATION OF THE MIDDLE EAR.*

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IN the brief ten minutes allotted for the presentation of this division of the topic under discussion it will be possible to speak only of those phases of the subject which deal with the etiology of the complications of chronic purulent otitis media, and of the frequency and serious nature of these complications.

Dr. Clarence J. Blake, of Boston, in a paper on "Otology and General Medicine," speaks of Prof. Politzer as holding up, in the course of one of his lectures, a temporal bone by the styloid process, and, while turning it slowly around before his class, making the following statement: "Gentlemen, the temporal bone has four sides; the outside is bounded by life, from which there comes, through the opening of the external auditory canal, one form of our appreciation of what life means; on the other three sides this bone is bounded by death."

That this metaphorical but forcible description is practically true is readily comprehended when the number and importance of the anatomical parts which may be involved and the serious pathological processes which may develop as complications of an acute or chronic purulent otitis media, are taken into consideration. It is my province to speak only of the complications of chronic purulent otitis media. What are these complications?

First, we have those which relate to the parts primarily involved, and among these may be mentioned the following pathological lesions: The membrana tympani is wholly or in part destroyed; a portion of, or all of, the mucous membrane lining the tympanum has lost all its characteristics, and in its place are to be found granulation tissue and polypi; similar changes are observed in many cases in the adjacent related cavities; one or more of the ossicles are carious or they may have been totally destroyed; or there may be a necrosis of the tympanic walls. In a second group may be placed those complications which involve still other auditory structures, as, for example, a necrosis of the petrous portion of the temporal bone, with destruction of the auditory nerve; a cholesteatomatous mass in the mastoid antrum; or a mastoiditis of such portions of the mastoid process as may have escaped eburnification.

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*Read at the meeting of the Medical Society of the County of New York, Sept. 22, 1902. Fifth paper of Symposium.

As a result of these pathological changes there is an impairment or loss of the important function of hearing.

In the third and last group belong those complications which involve other organs than those of audition. Thus, for example, one of the sinuses at the base of the brain may become involved in a septic inflammation, with the formation of a septic thrombus; the internal jugular vein and, in rare cases, the carotid artery may also be involved in a similar inflammation.

The dura mater may be the seat of a general or a localized pachymeningitis or extra-dural abscess; the pia mater and arachnoid may also be involved., *i.e.*, there may be a leptomeningitis; or the septic infection may invade the cerebral structures, giving rise to the formation of an abscess cavity in the substance of the brain. A facial paralysis may occur as a result of an erosion of the Fallopian canal.

The respiratory organs may be infected and there may be a septic pneumonia or a septic pleurisy. A metastatic abscess may develop in the liver or the spleen, or in some other part of the body.

A septic synovitis may involve one or more joints. A gastro-enteritis may occur as the result of the infected material passing down the Eustachian tube into the pharynx and then being swallowed. Or, finally, a general pyemic condition may be established.

It is remarkable, not that so many cases of intracranial and other complications arise in the course of a chronic purulent inflammation of the middle ear, but that many more cases do not occur; for upon reflection it must be admitted that almost ideal conditions exist in and near the middle ear for the propagation of pathogenic germs, and for their penetration into neighboring regions. It is also a fact that this invasion of neighboring regions is still further promoted by gross negligence on the part of the laity, and, to a certain extent, by the failure of medical men to realize the dangerous nature of this class of cases. Fortunately, the latter statement is growing day by day less true.

We find, in considering these points more in detail, that, in the first place, the disease is seated in a small cavity (the tympanic cavity) and that, in many cases, it involves secondarily the smaller adjacent cavities of the mastoid antrum and the mastoid cells, *i.e.*, cavities which are full of little niches and pockets, which are dark and of a uniform temperature, and which are lined with a mucous membrane that has become diseased and is secreting an abnormal amount of acrid fluid. In fact, we have here an ideal incubating chamber and medium for the generation of germ life. Micro-organisms (both saprophytic and pathogenic) are to be found in many varieties and in swarming colonies in all cases of chronic purulent otitis media. The pathogenic varieties most often observed are the streptococci (the most virulent of them all), the staphylococci, and the pneumococci; while tubercle bacilli, the *Bacillus intracellularis,* Friedländer's bacillus, the typhoid bacillus, the bacillus of diphtheria, and the *Bacillus coli communis* are also at times found in a bacterial examination of the purulent exudate obtained from this focus of disease.

With the probable exception of those cases which are due to tuberculous or syphilitic disease, all cases of chronic purulent otitis media result from a neglected acute otitis media. The inflammation, as it becomes chronic, changes the character of the mucous membrane in such a manner that in time the connective-tissue element largely predominates and the formation of granulation tissue with polypi is the result. Owing in part to the diminished blood supply and in part to the action of the bacteria, a necrosis of the ossicles and of the bony walls of the tympanum is started. These lesions extend until other cavities and structures are involved in the same destructive process.

There are many paths along which infection may travel from the original seat of the disease to most important and vital parts. The bacterial invasion may reach the meninges or deeper brain structures by way of the vascular system; thrombi may form in the small veins which pass from the tympanum and its contiguous structures into the neighboring sinus, and through the infection of the latter the veins which lead into it from the cerebral tissues may similarly become infected; or a thrombus may form in some small vessel, disintegrate, and be carried (because of a reversal of the blood current, owing to the occlusion of the vein and also in a measure to the lack of valves in the veins of this region) into the cerebral tissues; the bacteria may advance along the perivascular sheaths of the arteries and thus give rise—although such an occurrence is rare—to septic thrombi in the arteries themselves.

The lymphatics afford another pathway along which infection may travel to other structures. In rare cases the infection may extend from the middle ear, through the horizontal semi-circular canal of the vestibule, into the labyrinth, and thence by way of the internal auditory meatus to the meninges. Again, infection may be the result of direct contact made possible by the destruction of, or because of a dehiscence in, the bony partition separating the cerebral from the middle-ear cavities. Another means of infection was well illustrated in a case which was under my care during the past spring. In this case a sinus led from the antrum to the cortex of the mastoid process, where a very large subperiosteal abscess formed. The upper limit of this abscess extended as high up as to a point a short distance above the parietal eminence. A little below this eminence the bone was necrotic, and that the necrosis had extended from without inward was made evident, when the necrotic bone was removed, by the extent of the necrosis externally and its limited area on the inner table. At this point there was an extra-dural abscess, connected by a fistulous tract with a cerebral abscess; the extra-dural abscess did not extend downward farther than within three-quarters of an inch of the floor of the middle cerebral fossa—a further evidence that the infection was not conveyed through the tympanic roof. In this case, therefore, it is reasonably clear that the infection chose a most roundabout path.

A disintegration of a thrombus may occur and particles of it loaded with bacteria may pass into the general circulation, to give rise to a metastatic abscess, a septic pneumonia, or a septic pleurisy; or, as I have before stated, pus may pass through the Eustachian tube into the pharynx, to be swallowed and to give rise to a gastro-enteritis.

That these complications are not rare, statistics easily prove. In this country about 4,000 cases of brain abscess of otitic origin, or about one in every 19,000 of population, annually die, while, according to Körner, the Prussian statistics for 1885 give a death-rate for otitic brain abscess in that country about three times as great as that given above for the United States, or about three for each 20,000 of population. Whether the number for this country is lower because of the higher general intelligence of the people, which causes them to be less neglectful of a disease of the ear, or because of better hygienic and other conditions (favoring as they must a small number of cases with aural disease), or whether the number may not perhaps *seem* to be less because of the less exhaustive character of our statistics, are questions which at present I am unable to answer.

According to Pitt the number of brain abscesses which occur from otitic disease amount to 30 per cent. of the whole number. Barr estimates it as high as 50 per cent. of the whole number of abscesses of various origin. Pitt estimates that five per cent. of all cases of meningitis and two-thirds of all cases of sinus-phlebitis are of otitic origin. In 17,028 autopsies in London death was due in 102, or one in 167, to an otitic lesion.

In 10,707 cases with tympanic suppuration 69 deaths, or one in 155, occurred as the result of some aural lesion (Körner). In 38,017 aural patients death occurred as a result of the disease in 119, or one in 319 (Bürkner's and Randall's individual statistics added together). As to other lesions, such as general pyemia, pneumonia, etc., I have been unable to obtain any statistics.

Of all the intra-cranial complications pachymeningitis is the most common. Under this designation are included also those cases of so-called extra-dural abscess, which is a limited pachymeningitis walled off by adhesions from the rest of the brain surface. In the same category are also placed those cases which are known as perisinus abscesses, a condition which is in fact a pachymeningitis limited to the site of the sinus.

According to Jansen, pachymeningitis is four times as common as sinus-phlebitis, and 20 times as common as brain abscess. When either of these latter lesions occurs pachymeningitis is generally to be found associated with either or both of them, and especially is this the case with regard to sinus-thrombosis.

Leptomeningitis is an affection of the arachnoid and pia mater in which the infective material is carried along the minute blood vessels that lead from the brain. These cases are very fatal. Cases of serous meningitis of otitic origin, which, as I believe, occur more often than we have hitherto supposed, if recognized early and operated upon in such a manner as to secure good drainage, stand a very fair chance of recovery.

In brain abscess the cavity is connected in 92 per cent. of the cases with the suppurating ear by a fistulous track. In 95 per cent. of the cases there are multiple abscesses. In 6.6 per cent. of the cases the abscess lies within the brain and is separated from the source of the disease by normal brain tissue. The majority of these abscesses are to be found in the cerebrum, and of these the larger proportion are to be found in the inferior and posterior portion of the temporo-sphenoidal lobe. The next most common site is in the anterior and lateral portion of the cerebellum, behind the petrous portion of the temporal bone. Other portions of the temporo-sphenoidal lobe and also of the frontal lobes are often found to be involved, and in a few cases the occipital lobe has been the seat of the abscess.

Next to pachymeningitis, sinus-phlebitis and thrombosis occur the most often of all intra-cranial complications. The sigmoid sinus is the one most frequently involved and is generally accompanied by a perisinus abscess. By extension of the disease the internal jugular is very often involved, and the occurrence of general pyemia and other septic conditions elsewhere is frequent. When the superior petrosal sinus is involved a necrosis of the posterior and superior portion of the petrous portion of the temporal bone is likely to be the consequence. When the inferior petrosal sinus alone is involved it is the result of a necrosis of the apex of the pyramid or it is due to a purulent inflammation of the labyrinth. The cavernous sinus is seldom involved. In 82 per cent. of the cases the bone necrosis extends through the inner table of the mastoid process and is in direct contact with the sinus wall.

To prevent the development of these most serious complications the medical adviser must urge the necessity of dealing with every case of chronic purulent otitis media as something not to be lightly regarded, but as a disease which must be eradicated, no matter how innocent a case it apparently may be.

The disease is capable of advancing most insidiously and often without any symptoms until a very extensive destruction, not alone of the tympanic cavity and its adnexa, but of the brain tissues as well, has taken place. Brain abscesses have often been found at the autopsy to have been the cause of death when no such lesion was suspected in life. How many more cases of this and other pyemic complications of otitic disease die annually in which death is attributed to the complicating pyemic metastasis, or to apoplexy, or to heart disease, may only be suspected.

In the words of MacEwen, "One who has a chronic purulent otitis media is liable to have, with very little warning, a most serious or even a fatal illness."

48 West Fortieth Street.

THE TREATMENT OF CHRONIC SUPPURATION OF THE MIDDLE EAR.*

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THE time allowed me admits of but a crude handling of such a large subject, and I shall be able to touch only briefly upon some of the main points, with a reference to or mention of other more important operative measures for the relief of this disease.

At the outset, it is well to understand what is meant by the term "Chronic Suppuration" when applied to the ear.

The writer would define this as an inflammation of the structures which form the middle ear, that has lasted for a period of six months or more, with or without treatment.

There are many methods advised at the present day in the treatment of this disease, but clinically we shall consider only two, the dry, and the irrigation or wet treatment.

In treating this disease we should have three objects in view: first the cure of the otorrhea; second the improvement of the hearing; and third the relief of the subjective sounds, when present.

At the beginning of treatment a careful examination of the nose and naso-pharynx should be made, and should obstructions exist in one or both localities, they should be removed, as in children and young adults, a very common cause of middle-ear suppuration is due to the presence of adenoid tissue in the pharyngeal vault.

At the outset, the first cardinal principle is to secure and maintain cleanliness of the auditory canal and the parts adjacent. After this has been accomplished, the next important point is to determine just what structures of the middle ear are involved, as this will have a decided bearing upon the prognosis of the case. We should determine the location of the opening in the drum membrane, and whether the present opening is draining the cavity behind it sufficiently, and if not, this opening should be enlarged, so as to promote drainage. Usually the higher the perforation in the drum, the greater the involvement of the structures beyond, and the less tendency to a kindly healing. We should ascertain at the first examination, and before treatment is begun, if any caries of the ossicles or the adjacent structures exists, and this can easily be made clear by cocainizing the point of the perforation, and using the silver probe to palpate with, but the mistake should not be made of calling every particle of exposed bone "dead bone."

The dry treatment is carried out in the following way: The hands of the person who is to treat the case are first made sterile; then sterilized cotton is used on a carrier to thoroughly wipe the canal dry. After this drying process, a fine powder is insufflated over the drum surface as well as the canal walls; the powder used varies with the person treating the case: zeroform, nosophen, boric acid, acetanilid, aristol and iodol, have all been used with good results; after this, a small wick of gauze iodoform, borated, or plain sterilized, is passed up and, if possible, into the perforation, and the canal is loosely filled to the meatus.

If the opening in the drum be too small to admit the end of the gauze wick, then the canal is loosely packed from the drum to the meatus, and the gauze thus acts as a siphon to carry away the discharge. As soon as the gauze becomes thoroughly moistened with the discharge, it should be removed and the process of cleansing the canal carried on as before. The chief objection to this method of treatment is the absence of a trained nurse to carry it out on antiseptic lines; if this could be arranged for it might in the future become the ideal way of treating this disease; but when such treatment is left to the patient or to some member of his family, who knows practically nothing of what the word "sterile" means, it would seem that the disease might be prolonged to an indefinite period, owing to reinfection constantly taking place; and to put such a method of treatment in the hands of a hospital or clinic patient would seem to the writer a prolific cause in maintaining the disease.

The irrigation or wet treatment is the one ordinarily used to-day among the majority of aurists, and consists in syringing the ear with one of the following solutions: Bichloride of mercury in the strength of one to 4,000 to one in 8,000 of sterile water; a solution of boric acid of the strength of 20 grains to the ounce of boiled water; a solution of carbolic acid ranging in strength from one to two per cent.; a weak solution of formalin and a solution of potassium permanganate; a normal saline solution or warm sterilized water is all that is necessary in many cases; indeed, I believe we could dispense with all others except the warm saline solution, did we but try. When the patient is seen by the surgeon, and after the parts are cleansed in the manner described, a good solution to further sterilize the parts, is one composed of equal parts of the solution of bichloride of mercury one to 1,000 and absolute alcohol; to this can be added boric acid from 10 to 20 grains to the fluid ounce.

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* Read at the meeting of the Medical Society of the County of New York, Sept. 22, 1902. Sixth paper of Symposium.

If granulations be present, they can be destroyed by chemical agents; the one most commonly used in the ear to-day is a solution of silver nitrate ranging in strength as high as 360 grains to the ounce. Chromic acid is also used.

Before using either of these agents, the parts to be cauterized should be cocainized, thus avoiding pain for our patient. If polypi are present, they can be saturated with a solution of cocaine or eucaine and adrenalin, and be removed by the use of the curette or snare; and after their removal the base should be cauterized. In some of the cases where polypi exist, especially in our younger patients, it is best to administer an anesthetic, in order to obtain a complete removal. After the canal has been cleared in this way, and also in the ordinary cases of otorrhea, we direct the patient, or whoever is to care for him, to irrigate the ear with a solution of bichloride of mercury one to 5,000, every two, three or four hours, as the case may be, depending upon the profuseness of the discharge. As soon as the discharge begins to diminish, then the frequency of irrigation should be lessened, as it is well to bear in mind that the too frequent syringing of the ear lessens the integrity of the tissues and serves to soften and make the parts flabby, thus preventing resolution from taking place. After we have cleansed the canal, and just prior to stimulating the part, we should direct the patient to perform Valsalva's method of inflation, as this tends to expel from the middle ear, through the opening in the drum, any retained secretion. Should the patient be unable to do this, then gentle inflation, by means of the catheter, should be performed, and the secretion thus displaced should be removed, before our final application is made to the surface we wish to stimulate.

After the discharge becomes less abundant, and the patient is seen less frequently, a solution to be used at home can be prescribed, composed of the ingredients mentioned in a former paragraph, namely, boric acid dissolved in equal parts of alcohol and a one to 1,000 solution of bichloride of mercury. The patient is instructed to place from five to eight drops of this solution in the ear, morning and evening, after the cavity has been cleansed. This acts as a stimulant, and hastens the healing process. Later, as healing progresses, it should be used less frequently and finally dispensed with, when a firm cicatrix is formed. When the discharge is diminishing and after it has ceased, we can hasten resolution and improve the hearing by inflating and vaporizing the middle ear every other day, and later, once or twice a week; by this mode of treatment, the adhesions already formed are stretched, and the new drum surface is saved from any marked degree of contraction.

In cases where the perforation in the drum is on a level or higher than the short process of the malleus, we find a small amount of thin serous secretion, and this persists in spite of all treatment, we can, in a large number of cases, bring about a speedy cure by the thorough cleansing of the middle ear, by the use of the middle ear syringe, first injecting our sterilizing solution through the perforation until we are sure the cavity is clean, and then injecting an astringent solution sufficient to completely fill the tympanic cavity. The astringent most in use here is silver nitrate; and at first it should not be used stronger than five grains to the ounce; a solution of eucaine or cocaine can be injected into the cavity before the silver solution is used, and this will render it much more comfortable for the patient. Stronger solutions can be used later should they be required. Zinc chloride has been used in this way, and also a two per cent. solution of protargol has been followed by rapid cures, the stimulating qualities seeming to act beneficially without the irritating properties of some of the other astringents.

As to the use of hydrogen peroxide in the treatment of this disease, there is a wide diversity of opinion. Some authorities report most brilliant results from its use; the claim is that when so used it clears out the small cavities by displacing secretion, which otherwise would not appear without the use of this agent. That this claim is well founded there can be no gainsaying; but I should hesitate to use this agent in the ear, when the opening in the drum membrane is small, as the force exerted by the fluid might easily displace retained secretion, and carry it backward through the auditus into the mastoid antrum, and thus infect this structure. Were the perforation in the drum a large one, then I should not hesitate to use this agent, but a better and more stable one would be hydrozone. Enzymol in a 50 per cent. solution has received high praise as an adjunct in treating this disease. I have tried it in a number of cases, but with little or no improvement.

When the discharge is very persistent, and we have an area of exposed bone complicating the simpler condition, I have found the use of carbolic acid of very great value. The head is placed in a horizontal position and the canal partially filled with pure carbolic acid, and allowed to remain about 30 seconds, when the canal is syringed with pure alcohol. In this way the alcohol counteracts any escharotic action which the acid would have upon the normal tissues, and yet at the same time the diseased parts are thoroughly cleansed and stimulated. This procedure causes but little pain, as the patient experiences only a slight stinging sensation which quickly disappears. When after all the ordinary methods of treatment, a small perforation exists, with little or no moisture, the parts upon inspection look indolent, the method suggested and practiced by Blake, of fitting a very thin piece of sterile paper over the existing opening, will oftentimes heal the perforation. Flexible collodion applied over the perforation will also bring about healing in a short time.

To improve the existing tinnitus after the otorrhea has ceased, we employ inflation and vaporization of tube and middle ear, and also administer strychnia in tonic doses, as well as small doses of the iodide of potassium. When we find upon examination intra-tympanic caries, no time should be lost in its removal, and if there has been no previous involvement of the mastoid structure, this removal can be accomplished through the external auditory canal. If, however, the mastoid shows signs of a previous involvement, or the amount of caries is so extensive as to preclude its complete removal through the canal, then a posterior opening should be made, and the radical operation performed, so as to throw the mastoid antrum, the cavity of the middle ear, and the canal all into one. After this has been done, the application of a skin graft, taken from the thigh of the patient, and placed on the exposed area of the middle ear after the manner described by Ballance, will promote healing, and give a rapid and permanent result. In cases of long standing suppuration with extensive caries within the tympanum, it is unwise to attempt removal through the canal, for in a small proportion of these cases, perforation has already taken place through the tegmen, and the irritation set up at this point by the manipulations within the ear will often cause disastrous results by a future extension through this opening.

Also in cases of long-standing suppuration, when the discharge has suddenly ceased, and the patient complains of an uneasy sensation about the head with pain, and accompanied with a slight rise of temperature, we should lose no time in promoting free drainage from the middle ear, and even, if necessary, open the mastoid; and many of these cases if so treated will show marked destruction of the osseous structure.

During the course of a chronic suppuration, the mastoid is liable at all times to infection, and should it become affected, its opening is imperative at once in order that the deeper intra-cranial structures may not become involved. Should an involvement, such as an epidural abscess, thrombosis of any of the sinuses, or a subdural collection of pus take place, they should be treated at once on general surgical principles, and all pus evacuated, and the diseased parts removed.

When facial paralysis has occurred in the course of a suppuration of the middle ear, we should lose no time in removing the pressure or ulceration which has caused it, and after this has been done, the interrupted galvanic current should be applied daily to that course of the nerve affected; massage of the affected muscles will also be of great benefit, and the internal administration of strychnia in full physiological doses will hasten our cure. When a secondary labyrinthine involvement be present, the internal administration to the patient of philocarpine muriate will often bring about a happy result. Potassium iodide and strychnine have also been used with markedly beneficial results in this condition.

When the discharge has ceased in a certain number of cases, we find the hearing much worse than while it was present. Upon inspection these cases show destruction of a large portion of the drum membrane, and the ossicles bound down by adhesions. We can often succeed in effecting a decided improvement in audition by dividing these adhesions, a procedure which can be quite easily carried out, after the discharge has ceased. When our suppurative condition is dependent upon, or complicated by syphilis or tuberculosis, the appropriate treatment for these conditions should be carried out aside from the local treatment of the middle ear.

As a word of warning in all cases of chronic suppuration of the middle ear, where necrosis of the bone is found upon our first examination, it is our duty to inform the patient of the danger to life if this condition be allowed to exist without removal of the diseased bone.

One word more and I shall have finished, and that is, in the cases coming under our observation for treatment during the earlier stages of this disease, we should never lose sight of the fact that they need a general and systemic building up in order that the local condition may improve the more rapidly, as it certainly will under properly directed treatment.

62 West Fifty-second Street.

MEDICAL PROGRESS.

SURGERY.

Simplification of the Suture in Murphy Button Work.—The purse-string suture so commonly used to apply the intestine about the collar of the Murphy button is not always easy to insert and tie, and moreover, requires considerable time. The following simplification of this method, which succeeds well, is offered by F. REHM (C'blatt f. Chir., Nov. 29, 1902). First, as to entero-anastomosis, the gut is incised so that the length of the cut corresponds fairly well with the size of the button, which is then passed through it into the lumen of the intestine, and carried fairly forcibly against one angle of the wound, while the other angle of the wound is closed tightly against it with a couple of through and through sutures. Only one is necessary when the incision has not been made too long. Second, for end to end anastomosis, a Murphy button must be selected which corresponds fairly well with the diameter of the intestine. The ends of the open gut are then seized and the suture is put through and through on opposite sides of the neck of the button, so as to close the opening about it. The author states that the method is very easy of accomplishment, and takes much less time than the other usage.

Removal of Small Metallic Foreign Bodies from the Stomach without External Operation.—Since the introduction of X-rays has rendered it possible to observe the size, position and shape of metallic foreign bodies which have entered the stomach by accident, and since their presence there is a matter of great danger, which is really increased by a laparatomy for their removal, S. MAYOU (Lancet, Dec. 6, 1902) has found it possible to remove them by means of an electromagnet, guided by the X-rays. His device consists of an electromagnet two inches long, cylindrical, five-sixteenths of an inch in diameter, of soft iron at the ends and in the center, wound in the ordinary way, having a lifting power of four ounces, and connected with an ordinary four-volt battery. This magnet is inserted into an ordinary stomach-tube, with the end cut off, or, preferably, a tube with a perfectly smooth inner surface, so that the magnet may glide up and down with ease by traction on the connection wires. A narrow silver band is placed on the outer side of the stomach end of the tube, so that the end of the tube may be easily seen in the stomach with the X-rays, while the balance of the tube disappears. The tube containing the magnet is next passed into the stomach, preferably under anesthesia. The X-ray tube is placed beneath the patient, who lies on his back over the drum of a couch. The X-rays tube is then excited, and the magnet brought into contact with the part of the foreign body most suitable to draw into the tube. The current is then allowed to flow into the magnet, and the foreign body is drawn into the tube with the connecting wires. When the foreign body is in the tube, as is shown by its having passed the silver ring, the tube, magnet and foreign body are withdrawn together. Various sizes of magnet and tube may be used, to suit the foreign body and the patient's esophagus.

Wounds of the Heart.—A large number of cases in which wounds of the heart have been operated upon have been reported during the past few years and a surprising percentage have entirely recovered. Thirty-seven cases of suturing with various terminations are instanced by L. L. HILL (Med. Rec., Nov. 29, 1902) who also reports an operation by himself upon a stab wound of the left ventricle with recovery. By a review of previous cases he learns that the right ventricle is most frequently injured and the left auricle least so. Auricular wounds are the more dangerous on account of the thinness of the wall. A wound inflicted during diastole is less liable to be serious than a similar injury during systole and those of right heart bleed more profusely than those of the left. The presence of the foreign body in the heart, the size of the wound, its location, the number of wounds, the attending syncope and involvement of Kronecker's coordination center are important factors in determining the outcome. It is found that operation has reduced the mortality from about 90 to 63 per cent. Whenever the location of the external wound and the attending symptoms cause suspicion of a wound of the heart, it is the duty of the surgeon to determine the nature of the wound by an exploratory operation. An anesthetic had better be given and chloroform is perhaps the best. The wound should never be probed for fear of injuring the myocardium. Rotter's operation renders access to the heart very easy and consists of two incisions begun near the sternum and carried along the third and sixth ribs about four inches. A vertical incision along the anterior axillary line then joins the two. The third, fourth and fifth ribs with the pleura are cut through and this osseo-muscular flap is then raised, the cartilages of the ribs acting as hinges. As few catgut sutures as possible should be used, as they cause degeneration of heart muscle with perhaps later dilatation.

General Anesthesia with the Chloride of Ethyl.—Concerning this rather newer anesthetic for the purpose of producing profound narcosis the following principles are set down as accepted by H. GIRARD (Rev. de Chir., Nov. 10, 1902): (1) General anesthesia may be perfectly and completely attained in man, as well as in animals, with the chloride of ethyl; (2) its action is very rapid, and the excitement which it provokes is light and rather infrequent. Its application is usually made without resistance on the part of the patient, and recovery from narcosis by it is almost instantaneous; (3) the facility and suddenness of the awakening demand in practice a special watchfulness and therefore render it difficult to continue the anesthesia for a long time, and especially during an operation of especial importance; (4) although narcosis is brought about in these good circumstances, it is necessary that there should be access of air to the respiratory passages, at least at the beginning, which may then be reduced to a minimum. It is therefore necessary to have a first-class apparatus for giving the drug; (5) absence of actual vomiting or of a tendency to vomit during the hour which follows anesthesia makes it a means of choice for small operations; (6) there does not appear to be any need of looking out for accidents, because the drug is not at all irritating upon the mucous membranes, and therefore there is little danger of the laryngeal reflexes; (7) attention must, however, be paid to the lesions of the kidneys, liver and heart which carry with them anatomical changes. This point must be well understood before this drug is widely employed. The mixed method (in which chloroform and chloride of ethyl, or chloride of ethyl and ether is used) appears to give the best results, by shortening the period of excitement, by diminishing the amount of ether or chloroform consumed, and by opposing the tendency to vomiting at the beginning and end of the operation. There is no doubt that it offers many points of superiority over the more simple methods of anesthesia; (8) deaths which have been observed among animals after the anesthesia has been established, should justly be ascribed to some peculiarity of the respiratory reflex center.

Surgical Treatment of Splanchnoptosis.—An ingenious method of treatment has been resorted to, with good effect, by E. CURTI (Policlin., Nov. 22, 1902). The patient treated was a woman in whom a general splanchnoptosis existed; and from the extreme relaxation noticed in the abdominal wall, Curti concluded that a good deal of the discomfort experienced might be relieved by narrowing it so that it would give greater support to the viscera. This he accomplished, after first anchoring the uterus to the parietes and removing a cystic ovary, by overlapping the two recti muscles and suturing them in this position. The result is said to have been excellent.

Vascular Neoplasms Treated by the Injection of Hot Water.—In order to induce coagulation, thrombosis and subsequent absorption of vascular tumors various injection methods have been employed, but many of them, if successful, are liable to cause marked subsequent scarring from necrosis or ulceration. J. A. WYETH (N. Y. Med. Jour., Dec. 6, 1902) has used water at a temperature between 190° F. and 212° F. as an injection fluid into tumors belonging to all three varieties, viz.: the arterial angioma (cirsoid aneurism), capillary angioma, or "mother's mark," and the venous angioma (cavernous nevus). No accidents have occurred in any of the cases and the results have been very satisfactory. A syringe with a metal cylinder and adjustable piston is used, and under proper aseptic precautions boiling water is injected directly into the tumor mass. The quantity of water and the temperature should vary with the size and character of the growth. In the arterial and venous tumors of large size the needle is thrust deeply into the mass, and from a half to one dram of water is forced out. The needle is then withdrawn an inch or two and the injection continued till the entire tumor is solidified. The water should be hot enough to immediately coagulate the blood and the albuminoids of the tissues, but it should not be forced in so hot or under such pressure as to scald and produce necrosis. When a slight bleaching of the skin occurs the injection should be stopped. In treating the capillary nevi upon the face a small instrument with a delicate needle should be used and water a little below the boiling point is preferable. Not over two to six minims should be used in a single puncture, and the treatment should start from various points at the periphery and be closely watched for several days before being repeated.

Removal of Artificial Teeth from the Alimentary Tract.—The prominence recently given by the lay press to accounts of an operation for the removal of a dental plate which was supposed to have been swallowed but after the death of the patient was found in his room, is now followed by a timely report on the case by the attending surgeon, G. W. Crile (Cleveland Med. Jour., Dec., 1902). The patient stated his firm belief in having swallowed the plate, which was supported by the statement of the physician who first examined him. The urgency of the symptoms and the failure of esophageal exploration by instruments prompted immediate operation. An X-ray examination apparently demonstrated the teeth at the level of the superior internal angle of the scapula. Gastrotomy was done, also an esophogotomy, but the pharynx, gullet and stomach were readily demonstrated to be free and clear. Meanwhile another search revealed the teeth in an obscure portion of the patient's room. Death from exhaustion came on about 15 hours after the operation. The autopsy revealed an extraordinary degree of calcification of the larynx, particularly the posterior wall and cornua. There was marked atheroma of the arteries, the arch of the aorta being very dense and affording a shadow in the X-ray examination, which was readily misinterpreted. The case is believed by the author to be unparalleled in the extraordinary sequence of corroborative evidence. He thinks that the teeth were undoubtedly swallowed, but ejected unnoticed during a coughing paroxysm. The patient continued his struggles, believing they had not been dislodged, and mistook the hyoid bone for the plate. The writer has collected 149 cases of this character from the literature, and believes that the experience of many surgeons shows that exploration with the various sounds is an uncertain means of diagnosis. The X-rays must be classed among the accessory means of diagnosis, but are not infallible. Doctors and patients have often mistaken the cornua of the hyoid bone and the framework of the larynx for artificial teeth. Teeth have often been swallowed without the patient's knowledge. The mortality rate for the non-operative treatment is three times as high as for the operative, and each day of delay increases the danger. The author concludes, considering even his own experience that on diagnosis, prompt removal with or without surgical intervention is indicated.

Traumatic Rupture of the Spleen.—The treatment should always be operative, either splenectomy, suture or tampon. It has been found that removal of the normal spleen causes but slight, if any, changes in the organism. There is occasionally a little glanular swelling and a moderate anemia. Concerning the ordinary methods of treatment, the following is offered by D. U. Eisendrath (Ann. of Surg., Dec., 1902). He says that the experience which he has had demonstrated that it is almost impossible to suture a laceration of any extent, so that one must resort either to tamponing the tear or to removal of the spleen. It is advisable to tampon the tear if located on the convex surface or one of the borders and does not extend very deeply into the parenchyma, but this is contraindicated if the tear is either deep at this place, or there is extensive pulpefaction of the spleen, or, lastly, if the tear involves the hilus of the organ. Under these conditions it is far safer to perform splenectomy. At the time of operation one should have a clear conception of whether the force was circumscribed or diffuse, and an effort at a fairly accurate diagnosis of the viscus injured must have been made by the operator before opening the abdomen. When the abdomen is opened and reveals an extensive intraperitoneal hemorrhage, the chief source of this—liver, spleen and kidney—must be looked for in the order named. Digital compression of the splenic vessels will check the hemorrhage temporarily, until the location of the tear and mode of procedure can be decided upon.

Acute Appendicitis.—Passing over the various points in the treatment of this disease, a point not sufficiently elucidated is that of some of the extraordinary complications, of which the chief three are shock, vomiting and flatulent distention. The last of these is the most uncommon, and perhaps the most dangerous. In the opinion of C. B. Lockwood (Lancet, Dec. 13, 1902) the management of this undesirable phenomena is as follows: When flatulent distention is present at the time of operation, the question of enterotomy and evacuation of liquid feces and gas has to be entertained. The author's experience of incising and emptying the intestines for distention due to appendicitis leads him to consider the expedient a safe one. He has not yet seen the apertures leak into the peritoneal cavity. Experience may decide that in some cases the incision into the intestine ought to be sewn to the abdominal wall to act as a safety-valve for a few days. Such openings close, provided there is no occlusion of the intestine beyond. The flatulent distention which follows the operation may be met by the skilful use of enemas and by calomel or even croton oil. He has not yet tried the introduction of aperients into the cecum through the stump of the appendix, or through an opening made for the purpose. It seems to him better to avoid anything which might injure the cecum, and he confesses to a certain antipathy to the introduction of syringes and purgative solutions into the field of operation.

THERAPEUTICS.

Treatment of Tuberculous Cutaneous Ulcers with Balsam of Peru.—The curative power of this remedy is shown in ten cases of tuberculous ulcers of the skin, which had resisted all other treatment, reported by G. Silva (Rif. Med., Nov. 29, 1902). The balsam was simply painted over the lesion and a dry, aseptic gauze bandage was then applied. The author attributed the curative value of the remedy to its slightly irritating, antiseptic and protective qualities.

Hypodermoclysis with H_2O_2 in Asphyxia.—The advantages of this method of treatment over endovenous injections of oxygen are set forth by G. Campanella (Gazz. Osped., Nov. 23, 1902) who holds that the latter are not devoid of the danger of producing gaseous emboli, and the special apparatus necessary makes their administration inapplicable in the majority of cases. The author believes that the danger attributed to H_2O_2 from its oxidizing action in the presence of acids and from its reducing power in the presence of alkalies, is much exagerated. Fhenard demonstrated its presence in the air and water; Wurster found it in saliva, milk, perspiration and wherever the vitality of the protoplasm was greatest. Schönbein states that H_2O_2 is not only formed in the organism, but has an important function in the processes of oxidation. And if it is true, as has been stated, that the decomposition of this substance when brought in contact with living protoplasm or in the blood-vessels, produces symptoms of poisoning, with dyspnea and asphyxia, such effects are obviated through its hypodermic administration; either because it decomposes more slowly, or decomposition does not take place and its excess of oxygen is utilized by the methemaglobinuric blood of the venous radicles. That venous blood does reduce peroxide in vitro has been demonstrated through the arterial color produced by its addition to such blood. Its power to overcome asphyxia has been proven by the author through its injection into animals experimentally asphyxiated; those so treated recovering after repeated hypodermoclysis with H_2O_2, at intervals of five minutes; 50 c.c. being used in all. Asphyxiated animals who did not receive the injections succumbed within a short time.

Cancer of the Larynx Cured by the X-Rays.—The efficacy of the X-rays in the treatment of malignant disease, when located on the surface, so as to be directly influenced by the rays, has so often been attested, says W. SHEPPEGRELL (Jour. Adv. Therap., Dec., 1902), that its benefit is no longer disputed. When the malignant disease is situated below the surface the rays are not so beneficial. Still many physicians have noted the relief from pain, even where no other benefits could be observed. Actual improvement in such cases has been of such rare occurrence, even after long and patient treatment, that the outlook thus far has not been considered encouraging. The author's success in one case has been such that it is advised that further trial be given the proceedure. In April, 1902, the writer was called to see a patient who had a cancer of the left wall of the larynx involving the left vocal cord. Operation was advised, but as a cure could not be assured, the patient refused to permit it. It was proposed that the X-ray should be given a trial though the present knowledge of unfavorable results was made plain to the patient, the experiment was decided upon. On June 9 the first exposure was made with a tube of moderate vacuum. The glands were not involved. The first exposure was made for ten minutes and continued for 20 treatments, given every other day. At the end of the third week the case did not appear encouraging. After the twentieth application the patient was sent to his home, with instructions to report 10 days later, it being understood that unless some marked benefit from the treatment could be demonstrated by that time no further effort would be made to continue the treatment by the X-rays. After the patient returned to his home, he seemed to have a very severe time and it was thought that he would die. July 24, the patient returned to the writer's office and it was discovered that the whole mass that had projected into the lumen of the larynx had disappeared, including also a large portion of the left vocal cord, which had been involved in the malignant process. All difficulty of respiration and cough and also the pain had disappeared. The expectoration was still present, but had lost its purulent character, and was mucous, only occasionally streaked with blood. The treatment with the X-ray was at once recommenced and continued for 10 days longer, at which time the ulceration of the larynx had completely healed. October 25, 1902, the patient was in such excellent condition that no treatment was considered necessary, and the patient was told that there was a reasonable belief that a cure had been effected. The use of the voice had been restored, by employing the lower chest tones. The patient has resumed the practise of his profession which is that of a lawyer.

X-Rays in Cancer and Lupus.—All the diseases treated by the X-rays prove conclusively that there is a degeneration or destruction of the malignant tissue, whether superficial or below the surface. A. R. RAINEAR (Jour. Adv. Therap., Dec., 1902) believes that when below the dermis, the neoplastic cells are destroyed and eliminated, while the healthy skin remains in a normal condition. When the malignancy is in the dermis or epidermis, destruction will occur at that part only, with a resultant healthy scar. Malignant growths of a low type of vitality are especially susceptible to the action of the X-rays. The electrotherapist will more likely be consulted early, as the patient has not the fear of this sort of treatment as he would have of the knife. No theory has as yet been advanced which will explain the real action of the X-ray. The unfavorable results may be caused by the lack of proper knowledge of the appearance of the skin while the case is under treatment. The therapeutist should be aware of the exact time when the proper state of bronzing has taken place so that he can hold up in the application of the rays. Carcinoma of the breast and large epithelioma of the face require the least amount of care in the application of the treatment. X-ray burns are brought about by the following facts: (1) Too long exposure; (2) intensity of the current in the tube; (3) the quality of the tube, whether hard or soft; (4) proximity of the tube to the flesh; (5) local and constitutional condition of the patient. Among the advantages that the Roentgen ray has over all other plans of treatment in malignant growths, may be mentioned: (*a*) The X-rays have a specific action upon the malignant structures and those of a low vitality; (*b*) the X-ray exposures are painless; (*c*) they leave exceedingly small scars; (*d*) can be used in surgery where operation would cause a large uncovered area or a bad disfigurement; (*e*) the percentage of cures is greater than, or equal to, where surgical measures are employed; (*f*) there is no loss of blood to cause weakness and exhaustion; (*g*) the avoidance of an anesthetic, with its attendant annoyances and dangers. The choice of the instrument for excitation of the tube is a static machine of medium size, having 12 to 15 plates, varying from 28 to 32 inches in diameter, the speed ranging from 300 to 500 revolutions. A hard tube is the best for deep-seated cases, and a medium or low tube better adapted for superficial diseases such as, epithelioma, lupus and rodent ulcer.

Electricity as a Therapeutic Agent.—The therapeutic application of electricity is similar, if not identical, to the therapeutic application of other agents, says F. B. BISHOP (Jour. Adv. Therap., Dec., 1902). Blood-pressure may be relieved in many instances, and bounding heart quieted by a moderately strong current, graduated according to the susceptibility of the patient. Four milliamperes are about all that can be safely used in the region of the cervical ganglia. In giving strong and powerful medicines it is customary to dilute a great deal in order that the stomach may bear them and at the same time more readily ingest them, so also, in consequence of the well-known law of conduction and resistance, if we wish to give a strong galvanic current we dilute our current, as it were, by increasing the area of contact electrodes, because "the resistance of a conductor is directly proportional to its length, and inversely proportional to the area of its cross-section." After many years of experience the writer has come to the conclusion that the electric current should but rarely be used as a stimulant, as stimulation is followed by a bad period of reaction. When we consider the subject of static electricity we are considering therapeutic possibilities beyond our ken; we are simply in the dreamland of electrotherapeutics. Some patients are sensitive to the static currents and are made quite nervous from fear thereof; but after a while become accustomed thereto and take static modalities with great benefit. Conversely, the static current may sometimes be very beneficially used when the direct current is either not well tolerated or cannot effect a cure.

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ORGANIZATION BY CITIES AND COUNTIES IN THE CAMPAIGN AGAINST TUBERCULOSIS.

THERE is need of a "third party" in the United States; its aim should be social and sanitary, not political; "No Tuberculosis" is the motto which should be inscribed on its banner, and its policy should be local organization for the home prevention of the great white plague.

The critical struggle against tuberculosis began with the discovery by Koch of the tubercle bacillus; to-day governments, medical societies, voluntary organizations of laymen, and individuals are enlisted in the fight for health; but it is clear that that large measure of success for which all of us hope cannot be won without a wider extension of systematic effort. In the United States the minds of hygienists and the public are now ripe for the inauguration of means for the really efficient general control of tuberculosis. The first indispensable step is the organization of the entire country by cities and counties, and for this system of organization we now earnestly plead.

The public prints of late have widely advertised the proposals to establish hospitals and sanatoria for the isolation and treatment of advanced and incipient cases of tuberculosis. Too much stress cannot be placed upon this feature of the great work for the protection of the public health. Hospitals and sanatoria are a crying need, especially in all great cities, where overcrowding is prevalent and where poor and destitute invalids abound. And yet there is great danger that in the exclusive advocacy of this much-needed reform many who are struggling for the betterment of the health of the community will exhaust their resources and will fail to enlighten the public concerning primary and essential measures for the general prevention of tuberculosis. The local organization which is needed is not one which will limit its work to the foundation of a hospital or sanatorium, but one which is prepared to grapple with every phase of the tuberculosis problem. It should be a permanent body, composed of medical men and laymen, with sub-committees to conduct special lines of work such as investigation of local conditions, education of the public, hospital and dispensary supervision, relief of indigent consumptives, sanitary reform in tenement-houses, workshops and schools. It has been well said that each county can solve its own tuberculosis problem at home; it can and must do so, but if sanatoria alone are relied upon failure is inevitable.

The establishment of sanatoria in Germany for cases of incipient tuberculosis occurring among the working-classes was described by Prof. Brouardel as a "novel and momentous experiment in social polity." We shall not be content in this country even with so momentous a step. The prohibition of expectoration is useful in sanatoria, but would it not be equally salutary at home? Sanatoria furnish model conditions of good food and good air; the approximation of these conditions in the home life of the least fortunate classes must be our constant aim. In sanatoria and hospitals cases of tuberculosis are recognized and sufferers are taught to avoid actions which would constitute a menace to others; universal protection demands compulsory notification of private cases and general education as to the communicability of the disease. Rest is an important therapeutic measure; but it may be possible to obtain rest without an expensive and exhaustive journey to a distant sanatorium. Overcrowding is not tolerated in a sanatorium; shall we accept it as a necessary evil elsewhere, or shall we declare that, whatever the cost, this danger shall be abolished? These are a few of the things that city and county organizations should keep in mind. Nothing less will suffice than the consistent application everywhere of those principles which scientific medicine has now formulated, and the partial application of which has already demonstrated the possibility of an overwhelming victory over tuberculosis.

The scheme adopted by the Charity Organization Society's Committee on the Prevention of Tuberculosis will serve as a model for local organizations elsewhere. The main objects of this committee are (1) research into the social as distinct from the medical aspects of tuberculosis; for example, into the relations between disease and overcrowding, infected tenements, and unhealthy occupations; (2) the promulgation in every possible way of the fact that tuberculosis is a communicable and preventable disease; (3) the encouragement of movements for suitable public and private sanatoria for both advanced and incipient cases; (4) the relief of indigent consumptives by the provision of suitable food and medicines, by the payment of rent when necessary to secure adequate light and air, etc. This work is to be carried on permanently, not only for the benefit of consumptives, but for the sake of the community as a whole. We are glad to notice that at Scranton, Pa., a movement has been begun with similar objects. Thanks to the initiative of the Lackawanna County Medical Society, which has subscribed $500 for the purpose, there has been organized a medico-lay Society for the Prevention and Cure of Consumption. This society will establish a sanatorium, will open dispensaries for the treatment of lung diseases in the poorer districts of the city and will provide visiting nurses for poor patients who do not care to go to or cannot be accommodated in the sanatorium. A municipal laboratory is recommended and will probably be established. The urgent need of this work in Scranton is apparent to those who are acquainted with the mortality statistics of the city, for a study of these statistics shows that nearly one-third of all deaths occurring between the ages of fifteen and sixty-five are due to tuberculosis.

It is an old political axiom that "as New York goes, so goes the country." The sentiment of this community to-day is unmistakably "anti-tuberculosis." Scranton has wisely adopted the same sentiment and policy, and we look forward with confidence to its further adoption, city by city, and county by county, in every State in the Union.

THE ARMY CANTEEN.

As we have already intimated in the Medical News, the abolition of the army canteen was a measure that was not in line with the best of sound medical legislation.

The question whether or not a soldier should be permitted to drink alcoholic beverages under the "official sanction of the government," as we pointed out, was irrelevant. The larger questions of sexual morality and physical immunity from contagious disease we believed to be infinitely more vital and that the army canteen had proven itself a means for salvation from these evils, vastly more deadly and far-reaching than the ills of alcoholism, has been most amply demonstrated.

It is a subject of sincere congratulation then that much of the sentimentality that has obscured the issues in the past is to be brushed aside and that Secretary Root has transmitted to Congress a series of reports made by army officers upon the operation of the anti-canteen law. These, as we have already noted, have been unanimously in favor of the return to the old system.

It may be noted that in most of these reports the question of alcoholism alone is touched upon and the evidence is practically unanimous that for the feature of drunkenness alone the closing of the canteen has been responsible for its enormous increase. When the added evidence on the question of the increase of venereal disease is taken into consideration it becomes an imperative duty on the part of Congress to repeal an enactment that aids in the moral and physical degradation not only of the army private but of the entire body of the citizens of this country, both male and female, for the sailor and the soldier are moving foci of infection that stalk about ruthlessly devastating the land.

SANITATION AND THE ISTHMIAN CANAL.

At a meeting of the American Association for the Advancement of Science on January 2, a resolution was adopted directing the attention of President Roosevelt to the sanitary aspects of the construction of the Isthmian Canal, and suggesting the appointment, as a member of the Canal Commission, of a medical man familiar with tropical diseases. To this resolution we desire to add our hearty endorsement; and we feel sure that it will have the unqualified approval of all whose information and intelligence enable them to foresee the grave loss of life and waste of energy, and money which, in the absence of skilled and energetic sanitary control, inevitably will accompany this great engineering project.

In the light of recent sanitary achievements in

Cuba even laymen must recognize the value of the cooperation of medical men in the administrative control of such a community of workingmen as will gather along the route of the Isthmian Canal. At the Isthmus the greatest sources of danger are, fortunately, pernicious malaria and yellow fever—we say fortunately, because while, uncontrolled, these scourges have lost none of their fearful virulence, they are no longer capable of striking such terror in the hearts of enlightened sanitary officials as before the discovery of the scientific means for their control.

The sanitary problem has been characterized as the most serious one connected with the construction of the canal. It is inconceivable that it will be overlooked by the President or by any commission which he may name; but the precise degree of importance attached to it is of serious consequence. There are two practical ways in which this importance should be recognized: first, by requiring on the part of the official to whom sanitary control is entrusted, a wide experience in the application of measures for the restraint of communicable, and especially tropical diseases; and second, by placing this official in a position of such high authority as to ensure deserved attention for sanitary measures throughout the period of construction of the canal.

We understand that Gen. Wood is mentioned as the probable head of the Canal Commission. We do not believe a better appointment could be made. The appointment of Gen. Wood, however, could scarcely be regarded as meeting the recommendations of the American Association for the Advancement of Science. Gen. Wood's high duties of late years have somewhat removed him from the details of sanitary inspection and control. His appointment as head of the Commission, if it is to be made, should therefore be supplemented by placing on the Commission a medical man possessing the indispensable qualifications already mentioned.

To begin the construction of the Isthmian Canal without adopting every possible precaution against preventable disease would be to sacrifice the good name our government has recently earned for its wisdom in such matters. Let us build a trench to bear the traffic between the two oceans, but let us avoid, if we can, the sad necessity of digging a companion trench in which to hide the bodies of countless victims of preventable disease. To find the man who will perform this public service, and to secure his consent to serve as a member of the Isthmian Canal Commission, is a duty which cannot fail to commend itself to President Roosevelt. On him falls the responsibility; his is the opportunity.

ECHOES AND NEWS.

NEW YORK.

Uncinariasis.—On Saturday evening, January 17, at 8:30 P.M., at the Medical Library Building, 1313 Bedford Avenue, Brooklyn, Dr. Charles Wardell Stiles, of the Marine-Hospital Service, will deliver an address (illustrated) under the auspices of "The Medical Club of Brooklyn" on "Hookworm Disease (Uncinariasis): A Newly Recognized Factor in American Anemias."

Municipal Civil Service Examiners.—Public notice is given that an open competitive examination will be held for the position of Hospital Physician (fourth grade), annual compensation of $1,200 or less, on Thursday, January 22, 1903, at 10 A.M. The receipt of applications for this examination will close on Monday, January 19, 1903, at 4 P.M.

The scope of the examination will be as follows: Technical knowledge and experience.—Candidates will will be required to obtain 75 per cent. on the technical paper. This examination is being held in order to fill a vacancy of Resident Physician in the Workhouse on Hart's Island, Department of Correction. The compensation attached to this position is $900 per annum with maintenance. Persons securing a place on the eligible list as a result of this examination will also be eligible for certification to other departments in the city requiring the services of physicians. Applicants must be residents of the State of New York. Further information may be obtained by addressing the Secretary of the Municipal Civil Service Commission. S. William Briscoe, secretary.

PHILADELPHIA.

St. Agnes' Hospital to Be Enlarged.—Improvements costing $200,000 are planned for St. Agnes' Hospital during the coming spring and summer. The hospital has long been in need of wards for children and for isolated cases, a thoroughly equipped operating room and a nurses' home. A new wing 150 feet long and three stories high and three additional buildings are contemplated.

Annual Addresses of State Medical Society.—The following are the appointments for the annual addresses to be delivered at the meeting of the Pennslyvania State Medical Society at York: In Medicine, Dr. Henry M. Neale, Upper Lehigh; Surgery, Dr. William L. Estes, South Bethlehem; Obstetrics, Dr. John G. Clark, Philadelphia; Hygiene and State Medicine, Dr. Seneca Egbert, Philadelphia; Neurology, Dr. Charles B. Mayberry, Retreat; Ophthalmology, Dr. Edward B. Heckel, Pittsburg.

A Million to Fight Tuberculosis.—The announcement is made that Henry Phipps, of New York, will establish in this city an institute to be known as the Henry Phipps Institute for the Study, Treatment and Prevention of Tuberculosis. It is proposed to erect buildings costing at least $200,000 and to endow the institute with $1,000,000 or more. The director of the institute is to be Dr. Lawrence F. Flick, well known by his untiring efforts in behalf of poor consumptives. The institute is to be modeled somewhat after the Pasteur Institute of Paris but devoted exclusively to the study and treatment of consumption. A later phase of the question is that relating to the State law, prohibiting the erection of hospitals in built-up portions of cities. Dr. Flick is reported as saying that he will ask the Legislature to repeal the law or amend it. If this is refused the institution will be erected in New York where no such law exists. The statement is made that Mr. Phipps will not spend a dollar on the hospital until the action of the State is determined. The man who originally introduced the bill states that Philadelphia now has enough hospitals, as a number of them would not exist a week were it not for the State support received.

Lackawanna County to Fight Consumption.—The Lackawanna County Medical Society has lately begun an active compaign against tuberculosis that promises to yield excellent results. Resolutions passed by the Society demand a bacteriological laboratory for the city, compulsory registration of cases of tuberculosis, home instruction to patients regarding sputum, hygiene, etc., and a sanatorium for the treatment of early cases. To this end, the unanimous opinion of the Society is that the scope and equipment of the Bureau of Health should be so increased that it can take active efforts as above outlined.

Substitution in Medical Examinations.—Evidence obtained by the State Medical Examining Board points to the fact that two or three of the candidates at the recent meeting of the Board in this city were represented by substitutes. Investigation has been instituted and if sufficient evidence be obtained, a special meeting of the board will be called for the purpose of dealing with the offenders. Several members of the board have expressed themselves as being in favor of a photographic system to prevent such fraud being practised. One member would have students photographed when they matriculate and again when they graduate.

Multiple Neuritis Probably Gonorrheal in Origin.—At the meeting of the Section on Medicine of the College of Physicians, January 12, Dr. William G. Spiller exhibited a young man whom he believes to be suffering from the above affection although there are some points in the case that are not thoroughly understood. The patient contracted gonorrhea in December, 1901. A few weeks later swelling and pain in the joints began, involving in succession the left knee, right shoulder, left ankle, and also the glands of the groin. In July, 1902, difficulty in walking was noticed and in December weakness of the upper limbs began. All voluntary movements of the lower limbs are now much impaired, there is numbness of the toes, and sharp pains all over the body except the trunk. There is marked tenderness of the muscles of the calves and over the left popliteal nerve. A remarkable point is that the knee-jerks are much exaggerated. There is no disturbance of micturition and no signs of cerebral involvement. There is a vague history suggesting syphilitic lesion at the time the affection began but this is not considered probable. Even if it were syphilis the case would be a rare one, as syphilitic multiple neuritis is exceedingly uncommon. The possibility of cord involvement is admitted. Rest in bed, mercury, the iodides and salicylates have wrought much improvement.

An Interesting Cardiac Lesion.—Dr. J. C. Wilson exhibited this patient, a man of fifty-five years. The points emphasized were: (1) The lesion dates from an attack of rheumatic fever during March, 1902. It is interesting that the first attack, followed by endocarditis, should have occurred after the man had passed the age of fifty; (2) the existence of an endocardial murmur that a few weeks ago could be plainly heard at a distance of more than one meter from the patient's body. The patient described the murmur as a grunting sound and this was the condition that brought him to the clinic, no other symptoms being present; (3) the most extensive precordial thrill ever felt by Dr. Wilson is present; (4) the pulse tracing has a rather remarkable square top and there is pronounced tracheal tugging. The man has no pain or other physical signs of aneurism in addition to the one noted, but this condition, as well as that of aortic insufficiency, is believed to be present.

An Early Case of Osteitis Deformans.—This case was also reported by Dr. Wilson in order to put on record the case while only one bone is involved. The patient is a female, aged fifty years, who has marked pain and tenderness in the right thigh, this condition dating from a trifling illness during the summer of 1902. The thigh is considerably swollen. There is no pain or enlargement of any other bone. It is especially noteworthy that there is no evidence of hyperostosis cranii. Skiagraphs show an evident thickening of the lower part of the femur accompanied by forward bulging. The case is of interest because of its rapid development, the involvement of a single bone and the presence of marked pain.

Obituary: Dr. Bushrod W. James.—Dr. Bushrod W. James, the well-known homeopathic physician and author, died at his home in this city January 6, aged 67 years. He was prominent in homeopathic societies and was an extensive traveler, two of his books being written on Alaskan topics.

CHICAGO.

For State Medical Board.—Governor Yates, in his biennial message to the Legislature, has the following to say in regard to a State Medical Board: "A proposition to create a State Board of Medical Examiners has been under consideration by the board of medical men generally since 1897, when the secretary of the board, in his report, expressed the opinion that there was imperative need for an examining board which would leave the State Board of Health free to perform sanitary duties alone. In 1899 the State Board of Health gave its formal endorsement to a bill creating a State Board of Medical Examiners, and this measure has received the approval of representative medical societies of the State. I feel constrained, in view of the circumstances, to recommend the legislation desired in this particular. Necessarily, the duty of enforcing the law, and such rules and regulations as may have been adopted by the Board, now falls on the Secretary, who is the executive officer of the Board.

State Care of Consumptives.—By joint resolution the Senate and House of the Forty-first General Assembly directed the State Board of Health to investigate the advisability of establishing a State sanatorium for consumptives and report to the governor before January 1, 1903. By this report it was shown (1) that tuberculosis is the cause of one-seventh of all deaths; (2) that it is estimated that over 8,500 persons die annually in Illinois from tuberculosis; (3) that tuberculosis is a preventable disease; that while there is no infectious disease which causes such disaster in the human family, there is none which is more easily prevented. (4) That tuberculosis is a curable disease, especially in its earlier stages. (5) That patients suffering from tuberculosis, especially those of the poorer classes, cannot be properly cared for at their homes, and that the State for both humanitarian and economical reasons should care for the consumptive, and should prevent him from endangering the lives of those about him. One institution seems imperative. Governor Yates recommends the construction of such an institution,—the size and expense to be according to the judgment of the members of the State Legislature.

Notes on Plague as Observed in Sydney, New South Wales.—Dr. G. Frank Lydston read a paper on this subject before the Chicago Medical Society, Jan. 7. The author stated that the city of Sydney has had two epidemics of plague, the first in 1900, and the second in 1902. The latter epidemic was over before his recent visit to Australia. The Sydney epidemics gave the only opportunity the world has thus far experienced for the study of plague among civilized white people under modern scientific conditions by men fitted by experience and laboratory technic to make observations of true value. The author obtained much of his information regarding the plague from Dr. Ashburton Thompson, President of the Sydney Health Board. The first epidemic comprised 303 cases, 293 whites and 10 Chinese. The mortality was a little less than 34 per cent., but the mortality rate among the Chinese was 80 per cent. This race seems comparatively nonresistant to the disease. The 1902 epidemic comprised 141 cases. The proportion of Chinese and the mortality rate were not widely different from the 1900 epidemic. The origin of the plague was probably Hong Kong via Noumea, New Caledonia. The method of transmission was mentioned. The study of plague in Sydney has established the fact that the bubonic and septicemic forms, at least, are not catching. That this is not true of "primary plague pneumonia" is probable, and great caution is to be observed here. The bubonic type was the prevalent one in Sydney, a few cases only of the septicemic form being noted. The patients were treated at the hospital with Yersin-Roux anti-plague serum, and the contacts were inoculated with the Haffkine prophylactic serum if they so desired. In regard to these serums, the conclusions drawn by the health board are: (1) That the value of the prophylactic serum is doubtful; (2) that the use of the prophylactic serum is attended with obstacles which make it almost impracticable, irrespective of its intrinsic merits; (3) that the Yersin-Roux serum is also of doubtful value as a specific. Its action as a temporary reviver or cardiac stimulant seems to be demonstrated.

In the first epidemic there were 11,000 preventive inoculations. There was only one fatal case of plague in a vaccinated case. Even this was doubtful, but this experience could hardly be said to prove anything. The prevention of plague seems to be reduced to very simple principles. These are:

1. Prevent rats from getting ashore from vessels by mooring some little distance from the wharf and freshly tarring all ropes, fenders and hawsers which extend from the ship to the wharf. All gangways should be drawn up when not in use. When used at night, gangways and the wharfs should be brilliantly lighted.

2. All ships should be thoroughly fumigated with sulphur or formalin before entry and departure. This is very effective in destroying rats.

3. Great pains should be taken to keep advised of the health of rats in exposed cities. Any unusual movements or mortality among them should be at once reported to the health authorities. Laboratory study should be constant.

4. The number of rats should be kept down, so far as may be, at all times, and especially when cases of plague are found. Fully 50,000 rats were destroyed in Sydney within a few weeks, yet the number of rats were seemingly the same. There are, of course, many sources of error here, and, admitting the apparent fact, a simple explanation would not be far to seek. The equilibrium between the number of rats and the means of subsistence is pretty constantly maintained. A reward was offered for rats in Sydney, sixpence each being finally given. This bounty was too high. Rats breed fast and mature quickly, and it would pay to breed them at that price. Probably this was not done.

5. No matter how remote the chances of contagion, so infectious a disease as plague demands isolation and great care to avoid immediate infection.

6. A general cleaning-up is required in districts characterized by bad sanitation. This is especially necessary because the destruction of scavenger rats demands in all fairness an equally efficient substitute for scavenger work.

7. Fumigation of all infected and suspected premises. If properly done, rats are destroyed at the same time.

It is interesting to note that in 23 cases of plague in Western Australia in 1900, 21 were white and 2 Chinese. Both Chinese, and only one white, died.

Polymazia.—Dr. Wm. Fuller read a paper on this subject. The author stated that an elevation without nipples in the neighborhood of the thorax or axilla should give rise to the suspicion of a mammary gland. After going extensively into the literature of polymazia he reported the case of a married woman, aged twenty-two, pregnant the first time. In May, 1902, she consulted him in reference to small swellings which had made their appearance several months previously in her armpits. The discovery was accidental. They enlarged in size, and became more tender. The patient was instructed to return in a month for a second examination, at which time the real nature of the axillary swellings still remained undetermined. No change was found except a slight increase in the size of the tumor. In the latter weeks of pregnancy, which was terminated Nov. 10, 1902, the left axillary swelling became very full and distended, and resembled in every way the normal breast on that side. During the advent of lactation this condition was greatly intensified, and was more marked than in the normal mammary glands. Pain at this time greatly exceeded that in the other mammary glands, and gave great discomfort to the patient. When the child would suckle at the right breast, the accessory gland upon that side (right axillary) would become soft and flaccid, but a like condition was not seen in the left axillary enlargement when the left breast was emptied. The patient's clothing upon the left side was kept constantly wet, due to a constant oozing from small openings at the summit of the axillary gland. By taking hold of the axillary gland and making moderate pressure, the surface having been well dried, small drops of fluid would quickly accumulate on its surface. This experiment was repeated until satisfaction was complete regarding the source and quality of the fluid. At the end of three weeks the condition, as it existed at that time, was photographed. Two views were taken; each showed fairly well the supernumerary gland in the left side. In order to verify a diagnosis already quite positive, the essayist resorted to Goldberger's test, removing the hair from the left axillary space and thoroughly cleaning the skin, after which a hypodermic needle was passed directly into the gland tissue, and several drops of a white fluid were withdrawn and placed in a small bottle. A breast pump was used to withdraw milk from the normal mammary gland, which was placed into a second bottle, and the two submitted to a laboratory for examination. It was reported that the fluids were identical. This confirmed the diagnosis. A peculiar point in the author's case is the areola without a sign of a nipple. In the many cases in literature he fails to find but one similar case reported by McGillicuddy.

Are such cases congenital? If not, how do they occur? It seems rational to coincide with some authors, who explain the phenomenon thus: In the process of development, parts of the normal gland have been split off and have separately developed. The cases collected by the author from the literature have occurred above or below the normal mammæ, and near or in the axillæ. It seems natural that mammary glands should appear on the anterior part of the body, be they as high up as the axilla or as low down as the pubes, as such are commonly found in the lower vertebrates, and may occur in the human being.

The Surgical Treatment of Anuria.—Dr. Arthur Dean Bevan presented a paper on this subject before the Chicago Surgical Society, Jan. 5, in which he detailed the history of a case of anuria recently operated upon, with satisfactory result. Total suppression of urine occurs: (1) From mechanical obstruction of the ureter of the single functionating kidney of an individual, the other kidney either being congenitally absent or destroyed by previous disease; (2) from mechanical obstruction of one ureter in an individual possessing two functionating kidneys, with increased intrarenal pressure on the obstructed side, which by reflex nerve action prevents the unobstructed kidney from functionating, the so-called reflex anuria, or, possibly, after a nephrectomy, the involvement of the nerves in the pedicle may produce a reflex anuria; (3) from trauma of both kidneys, which, for a time, or until a fatal issue, is followed by complete cessation of function; also from trauma of a single kidney which apparently by reflex action so affects the uninjured kidney that complete anuria results; (4) from acute nephritis, as sometimes seen in scarlet fever and other forms of septicemia; (5) from certain poisons, as phosphorus, lead and turpentine, ether, chloroform, etc.; (6) from the peculiar condition known as urethral fever, commonly the result of the passage of a catheter or sound; (7) in the polymorphous symptom-complex, known as hysteria, anuria may occur.

The author stated that anuria is a condition, not a disease *per se*, and until the last ten years the condition has been discussed merely as a symptom occurring in a number of diseases, which usually marked a fatal termination, and for which little could be done by the medical attendant. Within the last twenty years, however, so much light has been thrown on the subject by Tuffier, Morris, Naēl and others, and so much good has been accomplished by intelligent surgical interference, that to-day the condition of anuria is entitled to be placed in the same class as the condition ileus, as one of sufficient importance to be considered and handled as a surgical entity. After citing briefly several cases gleaned from medical literature, the author presented a classification, namely, (1) obstructive; (2) reflex or paralytic, and (3), non-obstructive or nephritic anuria.

From a careful study of the literature and of his own case, the essayist reached the following conclusions: (1) The clinical importance of recognizing the three forms of anuria—obstructive, reflex, and non-obstructive; (2) The imperative necessity of surgical interference in the obstructive and reflex forms, and its possible value in the non-obstructive cases; (3) That in the first two varieties a rapid nephrotomy on the side of pain, tenderness and muscular rigidity is the operation of choice. If necessary, do not hesitate to make a double nephrotomy; (4) That nitrous oxide anesthesia is probably to be preferred; (5) That time-consuming operations to relieve permanently the obstruction are to be postponed to a later period, after the patient has recovered from the anuria; (6) Operate by the beginning of the third day.

Transplantation of Omentum in the Operative Treatment of Intestinal Defects; a Clinical and Experimental Contribution.—Dr. Emanuel J. Senn read a paper on this subject. The omentum plays a great rôle in the reparative process following traumatic injuries of the abdominal cavity, both in the destruction of microbes and protection of the general peritoneal cavity by reason of adhesions with intestines and the parietal peritoneum. While omentum transplantation is a recognized operation, as a reenforcement of intestinal suture, the author was impressed with the possibility of the use of omentum for directly covering an intestinal defect. Such a pathological condition following a duodenal ulcer, intestinal tuberculosis, gangrenous cecum, the result of an appendicitis, where enterorrhaphy cannot be resorted to, by reason of the unrealiability of the surrounding tissues in withstanding tension, or where suturing would cause too great narrowing of the intestinal lumen; also where the condition of the patient or extensive adhesions would not permit an enterectomy. The omentum has been transplanted over perforations in the stomach, both in experimental work and in man. The essayist, after referring to the work of Bennett, Braun, Tietze, Enderlen and others, reported a series of experiments for the purpose of investigating the possibilities of omental transplantation. The experiments were done under the most favorable circumstances as regards the surroundings for doing aseptic work, but the results were unfavorable. The author stated, however, that the unfavorable results from the experiments are no criterion of the future value of omental transplantation. The omentum in the dog is thinner than in man, and the adipose tissue is not as abundant nor as vascular; therefore, not as favorable for plastic work. The stomach is apparently the most favorable portion of the alimentary tract for omental transplantation. By reason of its fixed position, the gastric movements do not place as much tension on the transplanted omentum as is the case with the peristaltic wave of the intestines. The great omentum in this region is also found near its attachment, which may also be a favorable factor. The experimental and clinical evidence is abundant proof of this fact. The cecum is the most favorable portion of the intestinal tract by reason of its slight mobility. It lies in one of the regions most frequently attacked by pathological processes, and the future will demonstrate the adaptability of omentum for defects which cannot be closed by suture. Resection of the cecum or a lateral anastomosis is a formidable operation, as compared with omental transplantation. Primary transplantation of the omentum in gangrenous appendicitis will greatly obviate fecal fistula, which so often follows the operation. Until more clinical evidence accumulates, showing that reliable suturing can be done, intestinal transplantation of omentum should not be resorted to unless there is abundant drainage down to the seat of suture, besides walling off the general peritoneal cavity.

The author concludes: (1) Transplantation of omentum over defects in the stomach is an established operation; (2) transplantation of omentum over intestinal defects is recommended, but is still in the developmental stage; (3) transplantation of omentum over defects in the cecum is the most favorable portion of the intestinal tract; (4) transplantation of omentum over defects in the small intestine should only be done after fixation of the segment of the intestine to the abdominal wall; (5) gauze drainage should be resorted to, excluding the general peritoneal cavity.

GENERAL.

Baltimore Personals.—Dr. Leonard K. Hirshberg has been made Director of the Laboratory of Hygiene at the College of Physicians and Surgeons.

Dr. Frank Bayne and Dr. Henry Cassidy have been appointed physicians in charge of the X-ray apparatus at the Maryland General Hospital.

Dr. Francis P. O'Neil of Elmira, N. Y., has been appointed to the residence staff of the City Hospital. Dr. O'Neil is a graduate of the class of 1901 of the College of Physicians and Surgeons.

Bacteria in Ice Cream.—*The Maryland Medical Journal* for January contains the results of researches undertaken in the laboratory of the City Board of Health under the direction of Prof. Wm. Royal Stokes, City Bacteriologist, as to the species and number of bacteria found in samples of ice cream taken from various city dealers. Streptococci were found in great numbers in many cases and pneumococci once. The percentage of butter fat ranged from 1.25 per cent. to 11.25 per cent.

Tuberculosis Commission Will Send Out Inquiries.—The Tuberculosis Commission of Maryland held a meeting last week at the office of the State Board of Health and appointed Dr. Marshall Langton Price medical officer of the association. Dr. Price is a graduate of the University of Maryland, and will have charge of all statistics and general work of the commission under the supervision of the president, Dr. William S. Thayer. The board decided upon several forms of inquiries which will be sent out during the coming week with a view to gathering the statistics in reference to the prevalence of tuberculosis. Among the letters to be sent out there will be one directed to the superintendents of the various institutions in the State of Maryland. The letter is as follows: "The Tuberculosis Commission appointed by act of the last Legislature is making an earnest endeavor to get the best idea possible of the morbidity of tuberculosis in the State of Maryland. We are extremely anxious to obtain reports from all institutions with regard to this point. To this end we have printed a series of blanks, some of which we send to you with this communication. It would be a very great favor to the commission if, for the next year, you could arrange that at the end of each week the returns entered upon these blanks, one for each patient, might be sent to the committee. We feel that in many ways the result of these returns will form a basis for the most important part of our statistical work, and earnestly beg that you will co-operate with us in our investigation during the following year."

The commission has also prepared a number of blanks which will be sent to the medical profession throughout the State asking for information.

Dr. William H. Welch, president of the State Board of Health, has prepared the following letter, addressed to the medical profession of Maryland: "The Tuberculosis Commission of Maryland has permission, under certain necessary restrictions, to use the laboratory and death records of the State Board of Health for the purpose of its investigation. The State Board of Health also commends in the strongest possible manner the work of this commission to the interest and aid of practising physicians. If every physician in the State will, to the best of his ability, answer the few inquiries which the Tuberculosis Commission will make in the next year we shall obtain what all of us feel is a pressing need—an accurate view of the amount and distribution of tuberculosis in Maryland."

Changes in the Medical Corps of the Navy, Jan. 10.—Medical Director E. S. Bogert, retired, detached from the Naval Recruiting Station, New York, and to continue duty at Marine Recruiting Office, New York. Medical Director T. Wolverton, retired, ordered to the Naval Recruiting Station, New York. Assistant Surgeon J. H. Halloway, commissioned Assistant Surgeon from Sept. 26, 1902. P.A. Surgeon J. A. Guthrie, detached from the Yorktown and ordered to the Vicksburg. Assistant Surgeon K. Ohnesorg, detached from the Vicksburg and ordered to the Yorktown. Assistant Surgeon A. E. Peck, detached from the Annapolis and ordered to the Naval Station, Cavite, P. I. Assistant Surgeon U. R. Webb, detached from the Naval Station, Cavite, P. I., and ordered to the Annapolis. Medical Inspector F. B. Stephenson, retired from active service, on account of disability incurred in the line of duty, Jan. 3, 1903, to continue duty at Naval Hospital, Portsmouth, N. H. Medical Inspector S. H. Dickson, detached from the Iowa, and ordered to the Newark as Fleet Surgeon of the South Atlantic Station. Past Assistant Surgeon H. H. Haas, detached from the Montgomery and ordered to the Prairie. Past Assistant Surgeon J. E. Page, detached from the Newark and ordered to the Montgomery.

National Authorities Notified.—A dispatch has been received at the office of the Marine Hospital Service from the Board of Trade at Tucson, Ariz., calling attention to the existence of bubonic plague in Mexico and requesting that necessary steps be taken to prevent its spread into Arizona. The president of the Superior Board of Health of Mexico has officially announced to the authorities in Washington that the plague exists at Ensenada and Mazatlan, Mexico, and has requested the public health and marine hospital service to notify the Bureau of American Republics, that the South American countries through them may be informed. Dr. Grubbs, a medical representative of the public health and marine hospital service, now at Los Angeles, Cal., who has been investigating the situation at Ensenada, and Dr. Alexander, the medical representative at Ensenada have been directed by the Surgeon General to take any action in the matter that may be necessary.

Modern Popular Anatomy.—A rather delicious bon mot in modern anatomical knowledge is given in a New York firm's booklet advertising how to get and retain beauty, to quote: "The occipito frontalis is attached along the line of the eyebrows and runs back to the brain where it contracts and shortens." "To lengthen the muscles, etc., press firmly and massage." Here is a dash at the physiology of facial nutrition: "When there is too much flesh on the face, all movements must be downward—to put flesh on let the movements be upward." From the commonplace of new anatomy and still newer physiology we leap into the realms of poesy, "the skin and complexion take the velvety touch of the rose leaf and the flush of a June rose."

Obituary.—Dr. Albert Waring Atwater, who died at Burlington, Vt., Jan. 9, was born July 24, 1861, and was graduated from the University of Vermont Medical College in the class of 1885. Soon after graduation he established himself at St. Regis Falls, N. Y., where he practised with marked success up to the time of his last illness. He was unmarried and was the third successive Dr. Atwater whom Burlington has known. His grandfather, Dr. William Atwater, a graduate of the U. V. M. in the class of 1809, practised medicine in Burlington from 1830 to 1853, and his father, Dr. H. H. Atwater, a graduate of the U. V. M. in 1847, was a lifelong resident and practitioner in that city.

Dr. John Allard Jeancon, who served as surgeon of the Thirty-second Indiana Volunteer Infantry in the war of the rebellion, and who afterwards became a noted specialist in stomach diseases, died at his home January 13.

CORRESPONDENCE.

OUR LONDON LETTER.

(From Our Special Correspondent.)

LONDON, January 3.

AN ACT TO MAKE ENGLAND SOBER—INCREASE OF CANCER IN LONDON—PATENT MEDICINES—STATISTICS OF THE MEDICAL PROFESSION IN GREAT BRITAIN—INFLUENZA—THE DURBAR HONORS AND THE DOCTORS.

ON January 1 a new Licensing Act came into operation in England and Wales—not in Scotland or Ireland, which from a legislative point of view have to be separately provided for—which should make for sobriety. It contains several drastic provisions. Thus it is made a criminal offense for any person to be drunk in a public place while in charge of a child under the age of seven. This will prevent scenes such as that represented in Hogarth's "Gin Street," where a baby is shown falling out of a drunken woman's arms. It is made incumbent under heavy penalties on the keepers of public houses to prevent drunkenness on their premises. They are also forbidden to supply drink to anyone who has been convicted of drunkenness within the year. The police will assist the publicans in giving effect to this order by distributing among them the photographs of convicted drunkards which will be printed on special police notices. A very important clause is one providing that in certain cases the wife or husband of a habitual drunkard may be released from cohabitation by order of the justices. An order of this kind is to have the same effect as a decree of judicial separation. It is further made an offense for a habitual drunkard to purchase or attempt to purchase intoxicating liquors at licensed premises or at a registered club; it is also an offense for any licensed victualler to supply liquors to any such person. Another section of the Act imposes a penalty upon any one who procures drink for any intoxicated person. It may be said, in short, that drunkenness is now made a crime in itself, and that drunkards are treated as persons intolerable to society and are, as far as possible, deprived of facilities for obtaining the means of indulging in their vicious habit. It remains to be seen how the Act will work. Already several husbands and wives mated to drunken spouses have sought release under the Act, and the new law is being applied in all its rigor by the police.

The report of Mr. Shirley Murphy, Medical Officer to the London County Council, on the health of London during 1901, was issued on January 1. In ten years the death-rate of London has declined from 21 per 1,000 to 17.1. The total number of deaths in the metropolis in 1901 was 77,663. While the deaths from consumption show a gratifying diminution, cancer makes steady headway. In 1901 this disease claimed 3,982 victims, being at the rate of .93 per 1,000 living, as compared with .78 in 1891 and .42 in 1851-60. The age at which cancer most affects Londoners is indicated by the fact that 398 died at the age of thirty-five to forty-five, 891 between forty-five and fifty-five, 1,124 between fifty-five and sixty-five, 928 between sixty-five and seventy-five, and 394 between seventy-five and eighty-five.

A week or two ago the recipe and trade-name of a patent pill, known as "Dr. King's Dandelion and Quinine Bilious and Liver Pill," was sold by public auction in London for $25,000. The annual profits of the sale of the pill were stated to be $4,500. The British public has in recent years taken largely to doctoring itself with patent remedies of one kind or another. The amount of the stamp duties collected from this source increases every year as the following figures show: In 1897-98 it was $1,304,260; in 1898-99, $1,332,020; in 1899-1900, $1,444,135; in 1900-1, $1,487,400, and in 1901-2, $1,531,685. These figures do not show the full extent of the trade in patent medicines. Generally speaking only the old-established "cures" carry the patent stamp; the newer ones, especially those—and their name is Legion—which come to us from America, are content to copyright the title, thus escaping the excise. It is estimated that the number of patent medicines sold in the United Kingdom every day is quite one hundred thousand. Thirty million three-halfpences are paid every year as a direct tax by purchasers of shilling bottles and boxes and packets of the strange concoctions which declare their virtues from every hoarding in Great Britain. The shilling bottle of patent medicine finds its worshippers in greater numbers than Christianity itself. In a recent year the number of taxes received on these bottles was 29,569,576. There were paid in the same year nearly six million taxes of threepence, and 943,080 sixpences. The shilling tax falls upon another public, and its payers are not quite a hundred thousand, while the two shilling tax was paid in this particular year by only 4,277 purchasers. The Government is not likely to interfere by vexatious legislation with so profitable a source of revenue as patent medicines.

From the statistics that have been quoted and the marvelous virtues claimed for the patent medicines, it might be thought that the doctor's occupation would soon be gone. Yet a glance at *Churchill's Medical Directory* for 1903 just published, shows he too is increasing and multiplying almost as fast as the patent pills. The total number of practitioners on the *Medical Register* this year is given as 37,291, being an increase of 503 as compared with last year and of 5,564 as compared with 1894. Of the total number 6,309 practise in London, 16,422 in the English provinces, 1,186 in Wales, 3,680 in Scotland, 2,641 in Ireland, 2,917 are serving in the Navy, Army and Indian Service, while the rest are scattered over the various colonies, or practise at health resorts on the Continent. These figures make one think of the story of John Abernethy entering the great lecture room at St. Bartholomew's Hospital to deliver his inaugural address one October. On looking at the benches rising tier upon tier, all crowded with eager students, he was heard to mutter "God help you, gentlemen! What is to become of you all?"

The newspapers state that the prevalence of influenza is decreasing, but I do not believe there is any solid ground for this comforting opinion. It is true the Registrar-General's returns issued a day or two ago show a diminution in the number of deaths, but there is still a large amount of sickness in different parts of the country. In some schools the epidemic has been extraordinarily virulent, but naturally the authorities of such establishments do not proclaim the facts from the housetops. In Clubs, and other places where men most congregate it is almost taken for granted that everyone one meets has had influenza. On the whole, however, so far it has been, at least among the adult part of the population, of a mild character.

The following story should gratify Mark Twain. The Mayor of Southwark, Mr. Tom Bryan, who hopes to make his year of office memorable by instituting some municipal action with regard to the prevalence of consumption, said to an interviewer the other day: "I believe in humor as a cure for consumption, 'Laugh and grow fat,' as the proverb says. Some years ago a friend of mine was very depressed because the doctor had told him his case was hopeless; and to cheer him up I lent him a copy of 'Huckleberry Finn.' He laughed over that book for weeks, and grew better; and since then he has edited a newspaper and done a lot of other hard work. I feel quite sure that Huck Finn saved his life." A curious study might be made of the therapeutic effects of various kinds of literature. In convalescence Mark Twain, Dickens, and other simple humorists may be freely recommended; George Meredith would be to most people too fatiguing in a weak state of health, and "problem novelists" are too likely to raise the temperature.

The New Year is one of the occasions on which the "Fountain of Honor" (one of the official attributes of our gracious Sovereign) is expected to play on the multitude which thirsts for titles and decorations. This year, however, the hydraulic performance in question has been postponed, all the waters of the Royal well being required to slake the parched throats of Indian princes and dignitaries at the great Durbar held the other day at Delhi. There the sparkling showers have fallen in profusion on the just and the unjust. Some decorations have fallen to the medical profession, but the recipients are men whose importance is purely official, and whose services though of the highest value, are so entirely local that their names are for the most part unknown even to their professional brethren at home. A catalogue of them would therefore be of no interest to your readers.

TRANSACTIONS OF FOREIGN SOCIETIES.

British.

CHANGES OCCURRING IN A MAMMARY SCIRRHUS TREATED BY X-RAYS—EFFECTS OF X-RAYS ON RODENT ULCERS—RUPTURED CRUCIAL LIGAMENTS AND THEIR REPAIR BY OPERATION—ABSCESS OF THE LIVER—SALICYLIC ACID AND FOOD—THE PREVENTION OF PULMONARY PHTHISIS, INCLUDING THE NOTIFICATION OF THE DISEASE.

OUR medical and scientific colleagues, assembled together in their various societies throughout Great Britain, in the latter part of November and early part of December, considered the following important subjects:

S. R. SHATTOCK, at the Pathological Society of London, Dec. 2, 1902, reported a case of mammary cancer, which had been treated by X-rays, and made special reference to the changes which had occurred in the growth. The tumor was subjected for about three months to the rays, and clinically underwent diminution in size in addition to becoming more movable on the subjacent parts. Examination after removal showed, however, that no changes could be associated with the treatment, either macroscopic or microscopic. The stroma presented a variable amount of lymphocytic infiltration and contained mast cells and a few groups of Unna's plasma cells. The epithelium, which was of the spheroidal-celled kind, presenting nowhere any necrosis, and the only fatty degeneration of any note concerned the cells of the few mammary lobules still remaining about the edge of the growth. At no part of the margin did the growth cease to extend. The "cancer body" occurred in groups or single in certain of the epithelial cells and the arterioles around and in the stroma were normal. The results of the examination were highly disappointing, for no degeneration of any kind or cell lysis had been induced by the treatment, no phagocytic invasion of the epithelium was in progress, and on every side the growth was in an extending condition; there was nothing in the amount of lymphocytic infiltration, in the mast cells, and in Unna's plasma cells which might not be met with in cases where no treatment had been carried out. The clinical diminution in size of the mass and the loosening of the deep connections were difficult to explain; possibly they were due to the disappearance of a sub-inflammatory edema.

S. MAYOU read a paper on the Effects of X-rays on Rodent Ulcers. He first showed their probable relation to ultra-violet light, and thought that their effects were closely allied to other forms of stimuli. With the exception that their application was painless when applied to healthy tissues, they produced a superficial inflammation which was greatly increased by the application of other forms of stimuli. This was instanced by cases, since he did not think the fact was generally recognized. The dilatation of the vessels of the inflamed part seemed to be permanent in some cases after prolonged exposure. He thought that the rodent cells themselves acted as irritants and showed by sections that the leucocytosis was around these cells rather than in the neighboring tissues. The greater part of the growth (that was to say, the nodular masses) disappeared by sloughing, but the outlying masses of rodent cells degenerated, the degeneration taking place from without inward, toward the center of the clump. The cells becoming vacuolated and the granules collecting around the cell-wall seemed to be making their way through it. The chromatin of the nuclei gradually ceased to take up the stain, leaving only the cell wall, which was subsequently removed by leucocytes. The removal of a small portion of the growth in order to examine it for active rodent cells was found useful in determining when treatment should cease.

A. W. MAYO ROBSON, at the Clinical Society of London, Nov. 28, 1902, made a communication on Ruptured Crucial Ligaments of the Knee-Joint, and their Repair by Operation. The patient, a man aged forty-one years, was admitted into the Leeds General Infirmary November, 1895, for lameness, the result of an accident nine months before, when he was almost buried by a fall of earth and sustained numerous injuries beside the one to the joint in question. When admitted to the infirmary, the right knee was swollen, but it was free from tenderness on manipulation. When the muscles were contracted the bones were in good position, but as soon as the muscles were relaxed the tibia fell backward until stopped by the ligamentum patellæ, and, on manipulation the head of the tibia could be brought forward in front of the femur, there being also free lateral movement of the head of the tibia on the femur.

It was manifest that not only were all the ligaments relaxed, but that the crucial ligaments had been ruptured. On Nov. 21, 1900, the joint was opened by a semilunar incision carried across the front, dividing the ligamentum patellæ. The synovial membrane was found to be inflamed, and there was an excess of fluid in the joint. Both crucial ligaments were completely ruptured, having been torn from their upper attachments, and the ends were shreddy. They were stitched in position by means of catgut ligatures, the anterior being stitched to the synovial membrane and adjacent tissues on the inner side of the external condyle and the posterior, which was too short and was split in order to lengthen it, was fastened by sutures to the synovial membrane and cartilage on the outer side of the inner condyle. The wound was then stitched up by means of buried catgut sutures, and was closed superficially by interrupted silkworm gut sutures. The result was very successful, complete restoration of the normal movement of the joint having occurred. The plaster-of-Paris was removed in a month, after which movement gradually returned under massage. When seen on Oct. 21, 1901, the patient was walking without a limp, and could run, and was working eight hours a day at his old employment. The joint could be extended to the straight line and flexed just beyond the right angle, there being no abnormal lateral or antero-posterior mobility whatever. The author had not discovered any other case in which these ligaments had been repaired.

W. K. HATCH read a paper on Abscesses of the Liver. He said he had had in the Indian military service extensive opportunities of treating this disease, of which, in hospital and private practice, he had seen nearly 1,000 cases. He pointed out that the disease was common enough among natives, and that, although alcohol was a factor, the majority had suffered from dysentery. In discussing the diagnosis he insisted upon the characteristic hepatic odor of the fluid derived from such abscesses. Sometimes percussion gave a resonant note over the abscess, due, no doubt, to the neighboring colon. If situated near the middle of the liver, near the ensiform cartilage, pulsation might be propagated from the aorta, thus complicating the diagnosis. He wished particularly to call attention to the fact that aspiration was attended with considerable danger and ought, in fact, only to be employed when the diagnosis had been established and it only remained to determine the precise locality of the abscess. The danger lay either in puncturing an enlarged and highly congested liver or in wounding a large, hepatic vessel. Dangerous and even fatal hemorrhage might thus be caused, and in some instances from puncture of the vena cava. His practice was to open the abdomen by a two-inch incision, exposing the liver, which enabled him to introduce the cannula with greater safety. As regarded surgical treatment, he thought that incision was certainly the proper treatment, and the earlier the better, though it might be well first, in large abscesses, to draw off part of the pus, making the incision a day or two later, and thus lessening the chances of its becoming septic. He preferred to open between the ribs, rather than below them. He deprecated removal of ribs as being rarely necessary. Even in cases where the abscess contents were being expectorated, he preferred to incise. He never irrigated the abscess cavity unless it became septic. The mortality in hospital practice was high, amounting in some cases to 90 per cent.; in private practice it was only about 20 per cent.

C. J. MACALISTER and BRADSHAW, at the Liverpool Medical Institution, Nov. 20, 1902, contributed a paper on the influence of Small Doses of Salicylic Acid on Digestion and Nutrition, with Special Reference to its employment as a Preservative in Food. Evidence had been given in various courts and in Parliamentary committees, which was of the vaguest description, depending less upon actual observations upon the results of taking salicylic acid itself than upon the results of taking other antiseptics. The writers were strongly of the opinion that the nature and amount of preservative employed ought to be stated on the label. They had found that it was contended that salicylic acid was injurious for three principal reasons: (1) That it was antiseptic and anti-fermentative, and therefore liable to interfere with the digestive processes by destroying the digestive ferments; (2) that after absorption it was apt to injure the general health and to interfere with nutrition; and (3), that it was an irritant, and therefore apt to injure the mucous membrane of the stomach and intestinal canal. They had reason to believe that many who were opposed to the use of salicylic acid on the first ground did not distinguish between true digestion and decomposition. The writers had made numerous experiments on artificial digestion and they found that the presence of salicylic acid, even in saturated solution, had about the same effect in retarding peptic digestion as the same proportion of table salt. In pancreatic digestion of starch, it seemed to have no retarding influence at all after neutralization. In regard to the second objection, one of them had taken five grains of salicylic acid daily for a month without any ill effects upon the health; they had given it to children in fruit juice preserved with it, and they had watched its effects on other persons, and they found that it exerted no recognizable bad effects whatever. As regards the objection that salicylic acid was an irritant to the mucous membrane, they denied that it could possibly be so in any such degree of concentration as it was possible to obtain either in food or in the stomach contents. They maintained that salicylic acid as an antiseptic was of greatest value to the poorer classes in towns, thereby enabling them to obtain luxuries, such as non-alcoholic wines, free from the risk of decomposition, and at a moderate cost, and thus the public were able to obtain cheap. wholesome and agreeable beverages, free from the risk of moral and physical evil which attended the use of alcoholic drinks. They challenged the opponents to bring forth a single instance in which it could be shown that bodily harm had resulted from salicylic acid employed as a preservative, and they denied that it was possible for anyone to be injured by it in the proportion in which it existed in any of the preserved articles which had been brought to their notice.

F. T. PAUL had supported the medical officer of health in his endeavor to check the excessive use of salicylic acid as a food preservative on the grounds (1) That chemical preservatives were undesirable; (2) salicylic acid was a poison; (3) it was unnecessary to preserve the articles in which it was used. The first was an opinion shared by most medical men. The second point had been sufficiently proved at the time that salicylic acid was largely given for acute rheumatism, and referred to a paper he read before the society in 1876. As regards the third, it was admitted by the manufacturers of the fruit juices that they only used large quantities of salicylic acid in order to prevent alcoholic fermentation, and the consequent presence of minute chemical traces of alcohol, repugnant to the teetotaler; otherwise one or two grains to the pint would be sufficient. The other food substance for which salicylic acid was so largely used was bottled fruit, the flavor of which it completely destroyed. Heat sterilization in this case was alone necessary, as he had proved by numerous experiments. He agreed with other speakers that so small a quantity as one or two grains to the pint was harmless, and need not be objected to if stated on the label.

At a special meeting of the Edinburgh Medico-Chirurgical Society, held on Nov. 19, for the purpose of discussing the means to be adopted in the Prevention of Pulmonary Disease, including the notification of the disease. After the president, Sir Thomas R. Fraser, had indicated the lines on which the discussion should lie, H. H. Littlejohn was the first speaker, and referred to the difficulty of limiting the questions involved. He spoke of the preventive measures which medical men are chiefly concerned with, as contrasted with those which the municipality might adopt. He showed upon the screen several charts and maps illustrative of the general prevalence of the disease and its gradual decline in severity (over 50 per cent.) during the past 50 years, and indicated that general sanitary improvements had caused this reduction, apart altogether from the special measures which they were called upon to discuss. Since 1882 they had known that phthisis was an infectious disease and therefore preventable. It was, however, true, that its infectious nature had only recently been recognized by the general public, who were now loudly calling for preventive measures. It was admitted that the health committee should undertake these preventive measures in the same way that it did for all other infectious diseases. Others, again, argued that the liberty of the individual ought not to be interfered with, or the province of the private medical practitioner invaded. The sanitary authority, however, had no intention of interfering with the latter, but it would rather act by direct attention being drawn by the private practitioner. The idea of compulsory isolation of the patient, and the segregation of scholars or of workmen affected, as was done in the case of other infectious diseases, might be dismissed at once. Rational preventive measures alone would be adopted, and such as were affected on Koch's discovery. If people could be educated to take precautions for their own and others' safety, then they would be allowed to live under very similar conditions to those under which they usually lived. Such precautions could be furthered by (1) allowing the central authorities to know where the cases of phthisis were situated; (2) by the prevention of spitting; and (3) by the provisions of sanatoria for the cure, detention or education of patients, so as to enable them later to live in their own homes. As regards notification, in 1879 Edinburgh got a compulsory Notification Act in opposition to the wishes of the then medical profession, and as a result of the introduction of voluntary notification in 1889 the government adopted compulsory notification for the whole country. The objections to the notification of phthisis were such as the following: (*a*) The great uncertainty of diagnosis (this, however, was cleared up by bacteriological examination); (*b*) that on account of the nature of phthisis cases could not be controlled in the same way as cases of acute infectious diseases were; (*c*) that phthisis was not infective by contact or by the breath; (*d*) that ordinary preventive measures were said not to be required; (*e*) that notification would lead to social ostracism and the phthisical patient being branded as such in many cases would be dismissed from his employment; and (*f*) that the medical attendant would be interfered with. Koch's authority confirmed that compulsory notification was necessary, and what were its advantages? (1) A knowledge of the disease. A disease could not be fought apart from a knowledge of its existence and behavior. (2) A knowledge of sanitary defects which otherwise could not be discovered was obtained, *e.g.*, deficiency of light and ventilation, accumulation of filth, etc., and the dirty condition of houses. (3) It permitted of the education of the patient and of his family. (4) It allowed the sanitary authority systematically to both cleanse and disinfect both the house and patient during the course of the disease, and would so bring help to many who could not otherwise help themselves. Dr. Littlejohn hardly thought that compulsory notification would be adopted, though he should welcome it. Hitherto both the English and the Scotch Local Government Boards had refused to allow pulmonary phthisis to be notified. As regards voluntary notification, it was asked of what use was it, when it would reveal only a part of the incidence? Were the case one of scarlet fever, voluntary notification would be useless, but with phthisis it was very different. The notification of even 50 per cent. would lead to an immense reduction in the cases of phthisis. Even voluntary notification would be of the greatest possible value. Medical men would thus be asked to notify only those cases which they could consistently set apart for that purpose, and these would surely be the worst cases, both in themselves and in their surroundings, and from these the maximum amount of good would be obtained by notification. Dr. Littlejohn narrated the experience of New York, where voluntary notification was adopted in 1894, and with such little success that it was made compulsory in 1897. The good work of Dr. J. Niven, in Manchester, with reference to this disease was also alluded to, and it was shown that of 1,000 cases investigated, 350 could be traced to phthisical relatives either living in the same houses or coming to those houses as visitors. The experience of Dr. Newsholme at Brighton was alluded to, also. Dr. Littlejohn, in conclusion, referred to the futility of placing simple notices against spitting, and to the two kinds of sanatoriums required—(1) for advanced and hopeless cases and (2) for cases capable of recovery—and to the educative value of such institutions.

SOCIETY PROCEEDINGS.

OBSTETRICAL SOCIETY OF PHILADELPHIA.

Stated Meeting, held November 6, 1902.

The President, John M. Fisher, M.D., in the Chair.

(Continued from Page 94.)

Dr. J. T. Rugh had been especially impressed with one feature of the papers: the great variety of causes that act to produce pus in the pelvis. It may be from an internal or from an external cause, and, as indicated by Dr. Norris, the keynote of the treatment lies principally in the diagnosis. He wished to allude a little more fully to one or two points brought up by Dr. Wilson as to the diagnosis of collections of pus in the pelvis from bone lesions. The constitutional symptoms which accompany bone affections and formations of pus complicating them, are not so severe as those which come with infections from other causes. In the first place, the material which results from the destructive process is not pus. It is broken down material or detritus due to the action of the tubercle bacillus, and being without toxins of the pyogenic organisms, it does not give rise to the constitutional symptoms.

Another point is that the bone infection always interferes with function and most profoundly so when pus is present. In the spine cases, there is liability to bend or to stoop, as mentioned by Dr. Wilson. With sacroiliac disease there is always a limp. With hip-joint disease there is entire ablation of motion at the hip joint, and these disturbances of the motor functions are of the greatest diagnostic importance, and are easily recognized by an examination of the patient. The pain from bone lesions is mostly reflected pain. At times when the sacro-iliac symphysis is the seat of tuberculous infection there is tenderness on pressure over the thickened area, but in the great majority of cases the pain is reflected along the sciatic nerve and strongly simulates sciatica. These cases are sometimes treated as cases of rheumatism, but careful examination will exclude rheumatic infection because no other parts of the body are so affected, while in rheumatism you would in all probability find other parts involved and less interference with the function of the muscles related to the diseased parts.

Another point is that the tuberculous process is more likely to be lighted up after pregnancy has ceased. During the course of pregnancy, singularly enough, the tubercular process is in abeyance, the patient's resistance being apparently much greater at that period. After pregnancy has ceased, however, there is an accentuation of all the symptoms, and the case generally goes on to an unfavorable ending, unless prompt remedial measures are instituted. He wished to reiterate what Dr. Wilson has said as to the ultimate curability of these cases, that if they are taken in time and proper measures instituted, they almost invariably go on to successful recovery, but if unrecognized, the damage is ofttimes irreparable.

Dr. Charles F. Nassau thought that in regard to the variety of drainage in a case of appendicitis, the more one packs rather than drains, the better is the result. Dr. Deaver's practice of packing off the bowels from the seat of operation to prevent the contamination of the clean peritoneum and then replacing that gauze piece by piece with the drainage material is of great assistance in preventing spread of infection. It was his belief, that, other things being equal, if the bowels are kept away from under the edges of the abdominal wound there is less danger of pulling out a piece of bowel when the gauze is removed. This brings up the question when to remove drainage in these pus cases. Gauze is often taken out too soon. He thought nothing gained by removing even a small strip of gauze within three or four days after operation, although it has become the practice to do that, particularly in gynecological and pelvic work. Anybody doing pelvic work comes in contact with the question whether to remove the appendix in an ordinary pelvic operation when the appendix is not involved. If the patient is in a perfectly good condition at the end of every pelvic operation the appendix should be taken out if it can be reached without any trouble. This opinion was the result of personal experience.

In connection with pus in the pelvis from bone lesions nothing had been said in regard to the methods of drainage of psoas abscesses. If these abscesses are opened as any other abscesses should be opened, from end to end, disregarding everything that is in the way, starting at the front and going around the crest of the ileum direct to the back, healing may be expected. He had several cases under his care in which a perfectly nice recovery had been made by opening the abscess from one end to the other. It takes about three months for these cases to heal, but when they do so they stay closed as a rule. He had seen this operation done on both sides of the same patient. It makes a very large wound, and one which a timid man would not make.

If a freshly opened pelvic abscess is washed out, or even a localized pus collection in the broad ligament, and if the general peritoneal cavity is slightly opened by mistake the pus would be likely to spread over areas otherwise healthy. When an abscess is once opened you do not need to wash it out when drainage exists such as you can get by gravity in the pelvis. With pus in the pelvis in which the abscesses are localized in the layers of the broad ligament, that is, extra-peritoneally, they can often be opened with greater safety to the patient by making an incision closely along Poupart's ligament or a little lower and pushing the peritoneum upward. This is a particularly nice way to do in those cases in which the variety of infection is obscure. As Dr. Norris has said, the case rests upon whether or not we can make the diagnosis.

He thought perhaps fully 10 if not 15 per cent. of cases drained with gauze or glass tube develop hernia. If we do not have to drain, we can close the abdominal wall and drain by the vagina. Even that does not always do away with the question of reopening. He had a patient who had a very bad pyosalpinx, upon whom he did a hysterectomy. An opening was made through the top of the vagina and gauze packed in until the hemorrhage stopped. He then sewed the peritoneum over top of the gauze. The cavity healed after the gauze was taken out and about eight weeks later another abscess developed. This is a complication which would not be influenced by drainage from above. If we can get rid of drainage through the abdominal wall by taking better care not to leave large stumps and infected uteri we will attain to something nearer perfection than we have to-day.

The point mentioned by Dr. Deaver of the differential diagnosis of peritonitis with fibroids and appendicitis reminded Dr. Charles P. Noble of two cases; one patient who was known to have a fibroid tumor was suddenly seized with violent pain in the abdomen in the appendix region with peritonitis and tension in the rectus muscle on that side. Operation showed a twisted pedicle in one nodule of the fibroid mass. He had seen the same accident twice and in both cases the condition has been suggestive of appendicitis. In dealing with pelvic abscesses due to appendicitis, he thought that when we have these large pelvic abscesses from appendicitis, as a general rule. it is better to drain, and not to attempt radical operation, because under these circumstances the patient is almost invariably exceedingly ill, is prostrated and not a fit subject for radical operation. He had had a number of these cases in which vaginal drainage carried the patient over the immediate attack and in which a cure was effected at a subsequent operation. He had several cases also in which pelvic abscesses formed secondarily to operation for appendicitis with abscess, in which the secondary abscess itself was drained per vaginam. In two cases it was quite apparent at the initial operation that there was considerable risk of this and the pelvis was drained with gauze at the time; yet secondary abscess followed. One was in the case of an adult; the other in a child of twelve. Bearing out Dr. Wilson's statement that these cases are rare in adult women, he had never seen them. The fact that one could have had a large experience in gynecology and never have diagnosed an abscess from bone disease indicates how rare is the condition. He had seen only two cases in which the suspicion might have come up, because the pelvic abscesses pointed in the loin just above the brim of the pelvis. The abscesses, however, soon healed with good drainage. He had one case sent to him as psoas abscess. He did not believe it was a psoas abscess, but the patient had such marked symptoms that he cut down and exposed the psoas muscle and found it to be perfectly healthy. Dr. Wilson saw the case with him. The operation cured her hysteria. It is interesting to find that Dr. Montgomery who some years ago was very ardent as a vaginal operator has come to occupy the position much in accord with that of his colleagues. In his opinion the vaginal method should be reserved for special conditions and that the general method of attacking pelvic inflammatory conditions is from above. He was not in accord with the point made by Dr. Montgomery that when an abscess is incised through the vagina it should be irrigated and that gauze should be used. As a rule these cases do very much better without irrigation at the time of operation and whenever possible, without irrigation at all, and without gauze packing. If we have a large pelvic abscess and it is incised (not punctured), if the vaginal vault is widely opened, if necessary three inches, and there is free dependent drainage, the case does perfectly well without any form of glass, rubber tube, or gauze packing. The only cases in which gauze is an advantage is in the presence of a small sac with very thick wall in which you have to keep open the incision for a long time. This is the type of case which is least adapted to drainage. He thought the point raised by Dr. Nassau about packing off the peritoneal cavity applicable here. He looked upon the gauze pack not so much as drainage as a means of shutting off the peritoneal cavity from a septic focus. In the class of cases alluded to by Dr. Norris in which vaginal drainage is employed, as a rule he did not drain at all. With care and increase in skill it is seldom necessary to drain. It had been his practice when a patient died in a hospital to have an autopsy made, and there has not been reported a case in which there was reason to believe that the patient died from lack of drainage. By doing hysterectomy in this group of inflammatory pus cases and taking the healthy peritoneum from the bladder to cover over the wounded peritoneum we can avoid drainage in almost every case.

It is also interesting to hear mention of true phlegmon or suppuration in the pelvic connective tissue, because he remembered that some years ago when he reported such cases, they were not accepted as facts, by the more enthusiastic of Tait's disciples. It is now recognized by all that we do not have abscesses in the pelvic connective tissue. They are rare, but especially in puerperal cases we do have them. The most satisfactory method of treatment is vaginal incision. We can cure about all of them with their appendages intact.

He did not agree with Dr. Nassau regarding the point of incision for abscess in the connective tissue of the broad ligament. It is never better to incise above Poupart's ligament, but always better to incise through the vagina, because incision above Poupart's ligament is almost always followed by hernia. The only exception is when the pus points in the groin.

Dr. George Erety Shoemaker said it was impossible in reaching a conclusion as to the method of dealing with pus in the pelvis to be guided to a certain extent by the cause of the pus. Considering the organisms to be dealt with the colon bacillus, the tubercle bacillus, the streptococcus as found in puerperal cases; we have the gonococcus and the streptococcus or mixed infection. These are the principal factors and all agree probably that if the colon bacillus in active stage is found as in acute appendicitis drainage should be used, and that in dealing with the gonococcus we do not as a general thing require drainage; in dealing with the tubercle bacillus, if we can remove the infected tissue we do not require drainage. In dealing with the streptococcus as in puerperal cases we do require drainage, preferably through the vagina, while ordinary mixed infections may be best treated without it. There is another way of grouping these cases according to the tissue involved. As a general thing we drain as a measure of safety in abscess involving the integrity of the bowel wall and the appendix. When the pelvic connective tissue is chiefly involved as in some puerperal cases we can as a general thing drain from below with permanent success. Gonorrheal pus tubes call for abdominal section without drainage. Vaginal incision alone is unsatisfactory in these cases, because the sac wall is well organized and has a secreting surface. The same rule applies to vaginal drainage of cystic tumors. Vaginal drainage alone will be apt to cure any case where the sac wall is made up entirely of connective tissue with inflammatory changes.

Dr. B. F. Baer thought the glass drainage tube and gauze packing not only entirely unnecessary but positively harmful. It is accountable for some deaths and for nearly all of the bowel fistulæ. Further, the practice of "walling off" the abscess during the operation, with gauze, seemed to him to be overdone. He had seldom found it necessary, even in the worst cases of septic appendicitis. There is more danger of infection by the "walling off" with gauze than by quickly separating adhesions, liberating pus, removing the diseased organ and washing away any septic material by thorough irrigation with saline water. Whenever he had seen it done, it seemed to him that more injury was done and that there was more danger of spreading the infection, because it is a time-consuming and difficult manipulation; coils of intestine keep coming up and necessitate continual pushing to get them back. There is necessity for drainage in a few cases, but the percentage is very small; then the rubber tube is better than glass, because there is less danger of creating a fistula in degenerated bowel, and it admits of more freedom in changing the position of the patient.

Dr. Deaver concluded the discussion by saying that when the pelvis was full of pus the surgeon would open through the rectum using the old trocar and cannula and these cases would recover. The principle is the same as that in operation to-day per vaginam. The question of drainage in other pelvic operations depends largely upon the individual. Dr. Norris had referred to Landau's operations. He had not seen him do a single vaginal operation. He performed between 700 and 1,000 abdominal sections each year and had occasion to use drainage in a certain class of cases. Dr. Shoemaker had struck the keynote in speaking of the character of infection. He believed a certain class of cases required drainage. We hear of cases operated without drainage in which the abdomens are full of pus and that the patients get well. In the case of a woman with miscarriage he curetted and when not able to discover anything, incised the vagina and put in a piece of gauze which has been followed by a smooth recovery. The temperature and pulse rate have come down and all evidence of infection has disappeared. In extra-uterine pregnancies where there has been a blood clot and suppuration and in which all the pus secreting surface cannot be removed drainage is indicated. With Dr. Baer he used drainage less than formerly, but a different class of cases go to private sanatoria than to a general hospital. He believed we all have the same ideas, and furthermore, that if they all had the same class of cases they would do nearly the same thing. Certain operations can be well done by the vaginal route, but in his experience the larger number of pelvic cases are better done by the abdominal route. In regard to the class of cases mentioned by Dr. Nassau, in which the opening is made above Poupart's ligament, he had seen cases open spontaneously about Poupart's ligament, and he knew that there was a percentage of cases in which the mass is very high and cannot be reached by the vagina.

THE NEW YORK ACADEMY OF MEDICINE.

Section on Genito-Urinary Diseases.

Stated Meeting, held December 17, 1902.

Dr. John Van der Poel, Chairman.

Nephrectomy for Carcinoma.—Dr. George E. Brewer presented this patient who had been shown the Section some two and a half years ago shortly after a nephrectomy had been performed for carcinoma. At that time he gave a history of hematuria with pain upon the left side. The hematuria occurred twice at intervals of six months. The doctor saw him after the second attack when there was but a trace of blood although, two days before, he had passed a large quantity of blood. The cystoscope demonstrated the presence of a small clot adherent around the left ureter. He attempted to catheterize the left ureter coincidently. The patient was a stout man and nothing could be found on palpation. As it was evident that his previous attacks were limited to the left side it was thought advisable to make an exploratory nephrotomy. Under an anesthetic the exploratory incision was made in the loin and a tumor was found which elicited some fluctuation but, when the needle was introduced, no fluid could be drawn. Through the small opening much blood came and there was only one thing to do which was nephrectomy. The tissue was very friable and easily ruptured and the operation was one of necessity. The Koenig incision was made, the kidney was raised from its head and the pedicle clamped. Examination showed it to be a typical carcinoma. Along its surface were certain spots showing places of rupture. In other words the carcinoma had so distended the capsule of the kidney to the verge of rupture. The patient made a good recovery and was shown to the Section a few weeks afterwards and, in the discussion that followed, several stated that they wished to see the patient again at the end of two or three years. It now was within three months of the three years and he preferred to present it at this meeting, because it was devoted to the consideration of kidney troubles.

Nephrectomy for Hydronephrosis and Ureteral Stricture.—Dr. George E. Brewer exhibited this patient, a boy, in whom an error in diagnosis had been made. He came into the hospital with a history of pain in the right inguinal region but he had no fever. He had a distinctly palpable spot over the appendix which was not the seat of any pathological lesion. He left the hospital only to return with a tumor in the flank. There was a fluctuating swelling in the position of the kidney and he had an attack of extreme pain one week previous and so an exploratory operation was performed when he came down upon a large distended kidney. An incision into it showed the cortex about one-half or three-quarters of an inch in thickness. The pelvis of the kidney was dilated. The ureter was dilated down in the pelvis. The sound could be passed as far as the bladder. Although he could not detect the source of obstruction no attempt could be made to remove it. The kidney was incised, the urine passed freely and the patient made a good recovery and had no further disturbance until one year ago when he presented symptoms of an acute retention and then a calculus in the posterior ureter was removed by the peritoneal incision. The calculus presumably had caused an obstruction in the lower end of the ureter, had become loosened and then become impacted in the posterior ureter. He did not make the typical Koenig incision. The boy had been well ever since.

Nephrectomy for Calculus.—Dr. Brewer also presented this patient which was somewhat similar to the last case in that an error in diagnosis was made. The patient was admitted to the hospital with the history that for four years she had attacks of pain in the right side which were accompanied by large swellings. There was found a fluctuating small-sized tumor, the size of a child's head, which was very tender and a diagnosis of obstruction in the kidney was made. The day after her admission the swelling became less and by the third day it disappeared as also did the pain. The kidney was somewhat movable. The Edebohl incision was made and the kidney was found to be distended and the ureter was enlarged so far as it could be traced in the pelvis. The kidney was in a flaccid state. In the absence of evidences of calculus, searching high up, he thought the condition might be due to increased movability of the kidney. It seemed to fall forward and to be twisted on the ureter causing an intermittent hydronephrosis. Fixation of the kidney was performed by the Edebohl method. At the end of four or five days the pain, swelling and evidences of distention of the kidney reappeared. In the secondary operation that was done the ureter was found dilated to the region of the bladder. As the symptoms had been so severe for a number of years, and as it was impossible to reach the source of obstruction, the kidney was removed. The interest in the case was not only in the nephrectomy but also because he was able to report at the end of perhaps two weeks from the time of the fixation that the kidney was so firmly attached that great difficulty was experienced in moving it in any direction and much force had to be used in separating the kidney adhesions. He certainly had never seen a kidney more firmly attached or anchored.

Dr. Charles L. Gibson presented another case of this affection in a woman who gave the history of renal calculus beginning six years before she came under his care last July. Six years previous she had had two transitory, fairly well marked, attacks of renal calculus and, at one time, small calculi were passed; then she had an interval of freedom from her trouble until last July. Her attention was called to a sense of discomfort in the kidney region on the right side which was diagnosticated as a floating kidney for which she wore a bandage. Four days before he saw her she had an acute attack, ushered in by a diminution in the amount of urine passed and considerable pain. When he saw her she had a temperature ranging about 103° F. In view of the urgency of the symptoms he thought it best to perform an operation which was done on the following day. Koenig incision. Under the anesthetic the calculus in the kidney could be felt. Making an incision into the convexity a portion of the calculus was extracted, as soon as he was one-half way through, the flow of blood became so great that he thought it would be more conservative to remove the kidney *in toto*. The patient made a good recovery. Thirty ounces of urine passed within the first 24 hours. There was some shock and temperature but it was not alarming. It was interesting to note the Widal reaction 1-20 was present. The urinary function was now all right.

Nephrectomy for Tuberculosis.—Dr. Gibson showed another interesting case of tuberculous kidney. In this patient the symptoms were not at all pronounced. There was a feeling of discomfort in the right side, some general constitutional symptoms and no pronounced urinary manifestations. There was never any history of attacks of renal colic, no pronounced pain, no hematuria or pyuria and, therefore, the diagnosis remained in some doubt. She entered the medical side but he was unacquainted with what diagnosis because the history book was at the binders. She was soon transferred to the surgical side, however, with a kidney mass which was very sensitive and he was impressed with the fact that it was something more than a prolapsed kidney. The other kidney could not be palpated. The patient was running some temperature and constitutional symptoms. There were no signs of tuberculosis in the lungs or anywhere else. A diagnosis of pyonephrosis was made. When operation was performed using the long transverse incision he came down upon evident tuberculosis of the kidney very clearly limited to its central part resembling an infarct. Through the incision the other kidney could be palpated. To be absolutely sure of the existence of the other kidney, a posterior incision was made on the other side and the kidney exposed; it was perfectly normal. The result was most gratifying for the patient gained 20 pounds since last August and has much improved in general health and absolutely free from any urinary symptoms. The scar is absolutely firm, and although quite extensive, will probably never give trouble, as an incision so located gives admirable results.

Dr. F. Tilden Brown protested against the method pursued by Dr. Gibson for detecting the integrity of the left kidney. He thought that evidences of tuberculosis in the kidney, except of the grossest sort, by gross inspection of its surface, was the method to pursue. If one found himself face to face with an emergency nephrectomy, it was proper to resort to such means. But he believed that in any of these serious kidney operations differentiating the condition of the two organs should first be undertaken and thoroughly done.

Nephrectomy for Rupture of Kidney.—Dr. Charles L. Gibson presented this specimen removed from a girl eleven years old, who was brought to the hospital 12 days after being kicked by a horse. The history given showed that she had not had much shock and only a transitory hematuria. When he saw her there were no signs of any external injury, but a fluctuating tumor could be made out which contained two quarts of fluid. The pulse and temperature were normal. Upon making the ordinary nephrotomy incision posteriorly, and evacuating the sterile urine—there were no evidences of extravasation, the kidney was found split in two parts obliquely, *i.e.*, the lower third carrying with it the ureter was separated from the upper two-thirds where the vessels were. The lower fragment was completely cut off from its blood-supply, and the upper fragment had no outlet for the urine. The kidney was removed and the child made a good recovery.

The urines were segregated by a French segregator, a new instrument, but it did not prove at all satisfactory.

In this particular case the important fact to be determined was not so much whether the other kidney was affected with tuberculosis to a greater or less degree, but if so involved, how much presumably sound kidney tissue remained. This can be reasonably estimated to be sufficient, when one was able to see clearly and palpate a kidney which gave every outward sign of being normal.

Ectopia Renalis with Nephrolithiasis, and Pyelonephritis.—Dr. A. A. Berg presented this specimen, which was removed from a man who was admitted to the Mt. Sinai Hospital in May, 1900, when he gave the following history. He had been sick more or less for four years previous to admission. During that time he had had attacks of pain to the right of the umbilicus. The attacks of pain were accompanied by vomiting and frequent urination, although there was no pain in urinating. He had lost no flesh or strength and had been going about attending to his work as usual except during the attacks. At the time of his admission he presented a tumor lying to the right of the umbilicus, behind the lower half of the right rectus muscle, not affected by respiratory movements, and very painful upon pressure. It was fusiform in shape, slightly lobulated, semisolid to the feel. The cystoscopic examination was practically negative. He had a trabeculated bladder but the ureteral orifices were both normal. Urinary examination showed pus and traces of albumin and mucus. Quantity of urine passed was normal and its specific was normal. There was much doubt at first as to the character of the tumor. A tentative diagnosis of open urachus was made and an exploratory incision was determined upon which revealed a tumor situated retro-peritonally. The operation was performed by Dr. Gerster. The tumor was situated in front of the sacral promontory in the middle of the sacrum. Its character even then was in doubt. Dr. Gerster excised a portion of it for microscopical examination. The parietal peritoneum was sutured and a gauze tampon was used for drainage. Convalescence was smooth. A few blood cells were found in the urine after the operation, otherwise there was no interference with convalescence. The pathologist reported that the specimen was a piece of kidney and showed lesions of chronic nephritis. Then the diagnosis was made of a kidney lying in the concavity of the sacrum, firmly fixed, and the seat of a chronic nephritis. It evidently was a congenital displacement, an ectopic rather than an acquired condition. The patient was discharged in May, 1900. In the middle of June the patient returned and stated that two days before he was suddenly seized with a severe attack, which was accompanied with pain, frequent and painful micturition, chills and fever. Upon admission to the hospital this tumor, noticed before, had become larger, about the size of a cocoanut, exquisitely tender and painful. The patient had a temperature of 103° F. In the evening with the chills there was a temperature of 105° F., with rapid pulse, etc. The patient was evidently seriously sick and it was thought the tumor had become the seat of purulent foci, the result of an excision or possibly that strangulation of its pedicle had taken place, and it was thought best to make a second exploratory operation. Upon opening the abdomen few adhesions were found between the intestines and peritoneum. After freeing the peritoneum from the entire anterior surface of the tumor and exploring the pelvis he detected a stone which was easily palpable through the substance of the pelvis. The kidney pelvis was found to be the seat of a purulent inflammation. The kidney was brittle and friable, and its upper portion necrotic in character. The site of the kidney was packed and an exploration of the left lumbar region was made and a comparatively healthy organ was found. With that history and the condition of the kidney I determined to do a nephrectomy. The relation of the ureter to the vessels was interesting. The ureter came up from the middle line, crossed over the median anterior aspect of the kidney while the veins of the kidney passed in front and behind and so the kidney was caught between its vessels and ureter. The arteries came from below and passed upward and inward. The operation of nephrectomy was a simple one, but the patient died on the sixth day from a localized peritonitis with purulent infiltration around the neighborhood of the pedicle. The other kidney showed a similar state of degeneration.

Case II.—J. S., a male, twenty-nine years old, cloak maker. His family and personal history negative. Ten days before his admission he had an attack similar to the present one. The present attack commenced a day ago, with severe pain in lumbar regions, radiating downward into the groin. It was of equal intensity on both sides. There was no chill; some fever; he vomited several times. Bowels had not moved in two days, but he had passed plenty of gas. Urination frequent, somewhat painful; no blood in urine. On admission to the surgical service of Dr. Gerster, at Mt. Sinai Hospital, he was in fair general condition; the internal organs were normal. The entire abdominal wall was rigid, but especially the lower half of right side. Here there was also marked pain and tenderness. Rectally a large mass high up above the prostate could be palpated. Temperature 102.8° F., pulse rate 106. Uric acid 1.022, many granular casts.

Diagnosis: acute appendicitis. Immediate operation. Peritoneum normal; appendix congested and club shaped. Retroperitoneally, over the promontory of the sacrum, and in the sacral concavity was a rounded tumor firmly fixed. It was at once recognized as a sacral kidney. The peritoneum lying over it was incised, so as to inspect the organ. In peeling the peritoneum off its anterior surface a large vein at the pelvis was torn across; attempts to check the hemorrhage by the House Surgeon resulted in a large tear of another vein at the pelvis. It was found impossible to close the rents in the veins, so after temporary compression of the pedicle while the left kidney was located and felt the displaced organ was enucleated. The left kidney was found to be in its normal position, and of normal shape, consistency and size. The patient had an uneventful convalescence. The pathologist's report was of excised kidney, cubical in shape, pelvis on anterior aspect; external lobulation slightly marked. Veins ran longitudinally at the pelvis. Microscopical examination showed parenchymatous degeneration.

Nephrectomy for the Removal of Calculus.—Dr. F. Tilden Brown said he would like to present this case to substantiate the point brought out by Dr. Gibson when he found an annoying complication developing in the case of removal of the calculus primarily to removal of the kidney. The patient was a man thirty-seven years old who 17 years previous had had brief severe pain running up the right lumbar region. He then had an absence of pain for 10 years, when it recurred and had continued to recur at frequent intervals, the last one occurring one month ago. He had an attack of severe pain once a week which kept him at least 36 hours in bed. The urine contained a great deal of pus and there was vesical irritability. Palpation of the kidney elicited signs of tenderness. Examination of the bladder with the cystoscope showed nothing abnormal. Catheterizing the ureters gave 20 c.c. from the left side in 16 minutes, slightly turbid and much clearer than the five c.c. which came from the other side in the same time. Cultures showed the presence of the colon bacilli growth. An X-ray picture taken by Dr. Mosely gave a capital shadow in the region of the right kidney and a second picture showed an equally good shadow and good differentiation of the tissues surrounding. The clinical manifestations were enough to get him ready for operation. Everything seemed satisfactory except the patient wanted to know what was done and he was told that the probability was that there was some condition of his urine passed from the bladder that made us believe the right kidney was badly disorganized and that it might be in such a condition that it would be better for him to remove the stone with the kidney rather than to take out the stone and leave the kidney in because a second operation might be required to remove it. He naturally wanted to know if the other kidney was in the same condition and he was told that if he was willing to submit to an annoying test we would make it. The ureter was catheterized and blood was found. Although the left ureter showed the presence of large quantities of urine and urea, with the specific gravity satisfactory, still there was presented a certain amount of pus and traces of albumin; this with the growth of the colon bacilli showed an infected organ and made him feel none too sure about doing a nephrectomy no matter what conditions might present themselves there. Upon reaching this organ it was found to be in a pyonephrotic sac so large and disorganized that there was nothing to do but remove the kidney.

Dr. Charles H. Chetwood said that he had operated upon a case somewhat similar to Dr. Brown's, in which there were multiple abscesses in the kidney and in which he did not do a primary nephrectomy. He had simply drained all the pus foci and later had to do a secondary nephrectomy. He had reason to regret before completing the second operation that he had not performed a primary nephrectomy as Dr. Brown had done.

Dr. F. Tilden Brown said that despite the pathologist's report the clinical history and the appearances of the specimen and examination of the patient was sufficient to warrant the belief that there was a rapidly developing sarcoma, possibly disseminated by means of the spermatic veins.

Dr. Charles L. Gibson said that he had a case some years ago which presented the same features and in which there was a fibroma in the neighborhood of, but not in, the testicle proper. At certain points it had broken down and was surrounded by inflammatory tissue. The pus was evacuated and he then came down upon a very extensive dense tissue. It was presumably sarcomatous and its entire removal was impossible. He gave a gloomy prognosis, only to be told subsequently that the tumor was a pure fibroma. This was several years ago and the patient is entirely well.

Dr. A. Ernest Gallant referred to a paper read in 1892 by Dr. N. Senn in which he described a variety of tumor originating in the fibrous tissue of the abdominal wall to which he applied the term "desmoid." The description of the tumor here presented corresponds very closely with that type of neoplasm.

Dr. A. V. Moschcowitz believed that it was an abdominal sarcoma. These tumors in the testis most frequently belong to that variety of sarcoma, which have received the name of endothelioma, and which originate from the endothelial lining of the capillary or lymphatic vessels. These tumors are exceedingly malignant. He did not remember seeing many cases, about one-half a dozen, and not one recovered, in spite of early and radical operation. Only two weeks ago he had a patient with a tumor of the testis, and the diagnosis of sarcoma was made, and the patient was operated upon; the operation consisting of a high castration, with splitting of the inguinal canal, and deligation of the spermatic cord high up. This patient made a good recovery, but 16 days later, when he came to examine him, he already found what appears to be a recurrence in the abdomen.

Dr. Alexander B. Johnson expressed his concurrence with the conclusions drawn by the reader of the paper in regard to the operative treatment of these conditions. He desired to congratulate Dr. Blake upon the admirable presentation of the related cases. He believed that any one who had attempted to do a secondary nephrectomy in a case of pyo-nephrosis could not fail to agree that was one of the most formidable of surgical operations. He had seen very few cases of pyonephrosis cured by incision and drainage. In regard to the treatment of infected hydro-nephrosis he had expressed the opinion before this society last year that nephrotomy was the operation of choice in these cases. Practical experience during the past year had led him to modify his views to some extent. He believed that the proportion of cases of this kind in which it was practicable to reestablish communication between the kidney and the bladder by nephrotomy and thus to cure the patient was small. Moreover for reasons already expressed nephrectomy in these cases was often easy of performance and attended by less risk than was the cases in pyo-nephrosis. With regard to the treatment of kidneys that were infected and contained stones he would be inclined to recommend nephrectomy in perhaps a larger proportion of these cases than had Dr. Blake. He had removed a considerable number of infected kidneys containing calculi. All had completely recovered but one. The difficulties and dangers of nephrolithotomy in these cases were in their order of importance and frequency hemorrhage, sepsis, destruction of the remaining kidney tissue, and the difficulty in finding all the stones.

The transverse incision so often used by Dr. Blake offers many advantages when compared with the vertical, oblique and other lumbar incisions. At its anterior extremity the peritoneum is readily accessible and may be incised to facilitate palpation of the opposite kidney. It exposes the anterior surface of the pedicle of the kidney where the renal vessels are situated unobscured by the interposition of the ureter and in this way makes control of hemorrhage precise, which after all is the key note of safety in major operations upon the kidney.

Dr. Eugene Fuller said with regard to calculi in the kidney in those cases which were infected and where the deposit was phosphatic that the only satisfactory treatment was to take the kidney out. In such cases when he had left the kidney behind, after removing stones, other calculi had formed in many instances. At the same time where calculi were found in one kidney one should always bear in mind that a similar formation in connection with the other kidney was of frequent occurrence, so that it was really dangerous to take out the kidney having the calculi because other calculi might be found or might soon form on the opposite side. He had in mind a case which he had operated upon for stone in connection with both kidneys. The patient had aneuria and he took out a calculus the size of the thumb which had blocked the urinary outlet at the pelvis of the right kidney. The kidney was more or less damaged but he tried to save it. At the end of two weeks a secondary nephrectomy was demanded owing to renal suppuration. The patient got well remaining so for four years. Then complete aneuria again occurred caused by a stone blocking up the only remaining kidney. Before nephrotomy could be performed and the stone removed an abscess had formed which had destroyed some of the renal parenchyma. The patient lived two weeks after the last operation and finally died of aneuria. It was unfortunate that a secondary abscess in connection with the case had destroyed so much kidney tissue that enough did not remain to sustain life. It was interesting in this case, that before death there was an immense amount of urine secreted from the one kidney. He agreed that a secondary nephrectomy was an exceedingly difficult operation unless undertaken within two or three weeks after the nephrotomy while the wall of granulation tissue was still soft. After everything had healed and the adhesions had become organized the operation was extremely difficult.

Dr. George E. Brewer called attention to the violent hemorrhage encountered in attempting to remove calculi of large size. In one of his cases not only was there very extensive primary hemorrhage but also a secondary hemorrhage. The primary hemorrhage was so great that he was compelled to tampon the kidney; this arrested it for 24 or 36 hours and then the tampon was removed. Within a few hours an extensive secondary hemorrhage occurred necessitating retamponing the organ. This was a case in which there was a little infection and where there was a very large branching calculus in the kidney. He thought it would have been safer to have removed the kidney at first although there was a good deal of secreting substance which appeared to be capable of functionating.

Dr. James Pedersen recalled a report by Dr. Dowd of a case in which the hemorrhage was controlled, as he thought, by adrenalin solution. A small calculus was removed through a small incision in the convex border of the kidney. There was moderate hemorrhage at the time but considerable secondary hemorrhage. Adrenalin solution was used in the wound, apparently with good results in addition to the tampon.

Dr. John F. Erdmann said he had the after-care of the patient referred to by Dr. Pedersen and he had found that patient almost in a condition of collapse. Upon exposing the wound he could pass his finger in under the diaphragm where he removed a large quantity of clots. Adrenalin was given by the mouth and a tampon was inserted. He had a photograph with him of a case upon whom he had operated three weeks ago, in whom he removed the left kidney for pyonephrosis and a small stone six months before. Three weeks later there was pain upon the right side and a large branching calculus was found. He controlled the hemorrhage only by digital compression and then by tamponing. He allowed the tampon to remain in until it practically was driven out by pressure upon the fifth day.

Dr. Tilden F. Brown said that there was no border line between nephrotomy and nephrectomy which was a justifiable one and, therefore, Dr. Blake should be congratulated in his results from nephrectomy. He thought we should all be more alert and obtain a good comprehension of pus formation in the calix, or calices, or in the pelvis of the kidney where there might be a fairly smooth stone which could be removed without much traumatism, preferably through a posterior longitudinal incision into the pelvis. He believed that mode of removing stones was the one of choice in dealing with apertures. It was well to close them with great care with catgut and to fix in a very long Conde rubber catheter, suturing with light catgut in order to hold it in position and not irritate the pelvis of the kidney and bring it out upon the loin in such a manner that good siphonage could be obtained. The tube in this way can be kept clean and any annoyance by blood-clots can be avoided. Again any temporary retention of urine will be avoided. He believed that the remark made that ascending infections frequently followed traumatism of the lower urinary passages must be accepted with reservation. This big distention may first limit blood absorption and secondary infection of the kidneys by hemotogenous disturbances may occur which was perhaps just as likely as an ascending infection through the ureter. He had been struck by the degree of health presented by many patients when they had large nephritic kidneys; many were able to attend to their vocations and showed an excellent condition of health.

Dr. Joseph A. Blake said he did not say that ascending infections were due to traumatism.

Dr. Brown replied that he understood him to say that some cases of pyonephrosis were due to ascending infections from the bladder probably following instrumental interference with the ureter.

Dr. Blake did not believe that any history of such instrumental interference causing disease was gained in any patients under his care.

In regard to the bilateral occurrence of renal calculi, he said that one woman from whose kidney he had removed a large stone by nephrolithotomy had passed a stone from the opposite kidney two months after the operation.

NEW YORK ACADEMY OF MEDICINE.

SECTION ON ORTHOPEDIC SURGERY.

Meeting of Nov. 21, 1902.

George R. Elliott, M.D., Chairman.

Pott's Disease.—Dr. Homer Gibney presented a cured case of Pott's disease in a child three years old, with the following history: Six months ago (January, 1901), from no known cause he began to walk awkwardly, the abdomen was thrown forward and he swayed from side to side with evident pain. Nothing was noticeable but the above till June, when a swelling appeared in the left buttock which interfered with locomotion. He was treated at various hospitals and operated on at the Eighth Street hospital, by aspiration, pus and blood being withdrawn. Examination showed fairly well nourished child; nodular swelling on left buttock posterior to the great trochanter, tense but not painful. Boy could not walk. The body was thrown forward, the abdomen prominent. In the effort to pick up a penny, he supported himself by hands on knees. The lumbar spine was rigid and there was a slight prominence at the fourth lumbar vertebra. On August 1 a frame was applied and the grandmother was instructed in its care. December 20, doing well, very little deformity. Swelling on the left side had disappeared, January 11, 1902: Back in good condition, no deformity, fairly flexible. July 1, 1902: Has worn permanent jacket for two months which was applied and allowed to dry on the frame, thus getting complete fixation in over-corrected position. November 18: Left off the apparatus, spine flexible, no evidence of disease, discharged cured. As to treatment, he said the frame was the one used in dispensary and private practice, a modification of the Bradford frame, made of canvas over gas piping, easily bent from time to time, thus over-correcting the deformity.

Dr. Charlton Wallace presented three cases of this same disease under treatment on the Whitman modification of the Bradford frame, the duration of the disease being twelve, eight and six months respectively. He said, while as a rule cases over eighteen months of age are not treated by the frame, one of the cases presented was four years old and was doing well on the frame; in that case the disease had only lasted six months. The frame used is a parallelogram made of three-quarter inch gas piping, four inches longer than the child, two inches excess at either end. It is made wide enough so that the side bars are opposite the glenoid cavities of the scapulæ. It is covered with tightly fitted canvas laced in the rear. Two pads are arranged on each side of the focus of the disease sewed to the canvas. Rubber cloth covers the canvas over the lower half for cleanliness. The apron is attached to three buckles on the sides by straps which are kept tight. The frame is gradually bent backward till the highest angle of the bend is at the site of the disease so that the back is hyper-extended and the pressure relieved from the bodies of the vertebræ.

Dr. R. H. Sayre said he thought the treatment excellent. He used a similar treatment. He believed, however, that Dr. Wallace allowed the patient too much freedom of motion. He considered the motion of the legs unwise as the play of the psoas muscle exercised a great deal of action on the spine, especially if the disease affected the lower dorsal or lumbar regions. In such cases the legs and trunk should be controlled; a jury mast to the frame would be an advantage. He preferred the cuirass, allowing control of both extremities of the spine. It was also injurious to take the child off the frame for movements of the bowels and bladder, as so much moving would cause traumatism of the spine.

Dr. Royal Whitman stated that he had described and illustrated the treatment shown by the cases presented some years ago and thought it better than the cuirass or other flat apparatus because of the over-extension which this apparatus allowed. He further remarked that children were not removed from the frames for movements of bowels, diapers or an ordinary dustpan being used while the child was in position on the frame. Head and leg traction could be used if necessary, but the position of over-extension itself was a great protection to the spine; it was also an advantage to have the side-bars close together as this allowed of less sagging than in the original Bradford apparatus. He further observed that the clothing adjusted over the frames was arranged to include the frame and the child. If further fixation were desired the child was suspended and a light plaster jacket applied. The patient was then replaced on the frame to which its jacket must conform in hardening, thus assuring fixation and over-extension.

Congenital Dislocation of the Hip.—Dr. Whitman presented a patient operated upon five years ago for congenital dislocation of the hip, by the open method with enlargement of the acetabulum. But one side was operated upon as anchylosis appeared probable. Now the patient, a girl aged eleven years, limps on the unoperated side and considers the anchylosed limb the "good one." The operated limb is two inches longer than the other and is much larger. There is no deformity, and practically no motion in the joint. This, Dr. Whitman considered as bearing out his contention advanced some years ago, that in the treatment of unilateral dislocation secure reposition—even if motion was very limited as the result of operative interference, provided there were no deformity, was a great improvement over unreduced displacement. He mentioned three similar cases to the one presented and stated that he thought all of them had asked for operation on the other limb.

Dr. V. P. Gibney referred to a case similar to the one presented by Dr. Whitman, in which one side had been operated on with anchylosis, the operated leg being the better. He spoke of another case in which the operated limb was 2½ inches shorter and the thigh three inches smaller in circumference, yet the patient walked with ease. He noted the fact that patients and parents generally regarded these results from a different standpoint than the physician and almost invariably begged for operation on the other leg.

Noisy Shoulder.—Dr. Sayre presented a patient seen two months ago, giving the history of slight curvature of the spine accompanied by crackling of the muscles over the scapula on moving the shoulder up and down; there was also pain over the deltoid on the same side; the impression was given that the scapula was sliding over some substance. The case was presented for diagnosis and suggestions for treatment. Dr. Sayre referred to a somewhat similar case in an athlete who, after violently lifting weights stated that he had pain along the erector spinæ muscles with muscular cracklings.

Dr. V. P. Gibney said he had a similar case under observation in a young woman, aged twenty years, who had a noisy shoulder for a year. She had intercostal neuralgia and hysterical spine. He regarded the symptom as hysterical and prescribed the Paquelin cautery with rest; marked improvement followed.

Dr. Whitman had seen several such cases and was impressed by the fact that the patients always wanted to produce the noise. He thought it was caused by a snapping tendon or possibly by a bursa beneath the scapula.

Dr. Homer Gibney stated that in giving exercises to patients he had noticed these crackling sounds in many cases, especially in one exercise for lateral curvature. He also thought it was a snapping tendon.

Dr. Elliott said he had seen similar cases and at present was treating a girl for lateral curvature of the spine who had the noisy shoulder to a marked degree. When he first saw her the scapula was quite immovable. She had been taking rather vigorous exercises under treatment and as a result the scapula had so become quite mobile, and the noise was very marked. The slipping of tendons did not satisfactorily explain this objective symptom.

Typhoid Spine.—Dr. Leonard W. Ely read this paper. He referred to the summary and analysis of 26 cases reported by Dr. F. T. Lord in the *Boston Med. and Surg. Journal* of June 26, 1902, since Gibney reported his first cases in 1889, and said he had found three more cases reported.

The patient he referred to in his paper was a physician aged thirty-three years, who had a severe type of typhoid fever, January, 1902, complicated with pneumonia and pleurisy. At the end of six weeks when the patient began to sit up, weakness of the back was observed. Following the convalescence in March, the weakness in his back continued and was made worse by an attempt to stoop. A lateral curvature and stiffness of the lumbar spine was observed, with some pain and great difficulty in standing erect. March 23 a severe chill was followed by pneumonia of the left lung, complicated with pleurisy with effusion.

After three weeks, when the patient began to go about, the lateral curvature was quite marked and was accompanied as before by stiffness, weakness and lumbar pain; no sensitiveness of spine to pressure. He went to Southern California early in May, but the spinal symptoms did not subside. The stiffness, weakness and pain were increased by exertion. A severe cramp in the left lumbar region followed an attempt in rising from his chair, and returned each time he attempted to get up so that he was compelled to keep his bed. When quiet in bed the pain did not return. A severe spasm in the left lumbar region, however, followed while turning over in bed. The spasm was tonic in character lasting 30 seconds gradually relaxing, then returned and was only relieved by chloroform inhalation after moderate use of morphine had failed. It was necessary to chloroform the patient when subjecting him to any effort. The pain shifted to the right lumbar region the spasms became less severe and were controlled by morphine. Examination showed patellar reflexes exaggerated, intermittent twitchings of the muscles of the thigh, no loss of sensation, no paralysis.

Spasms in the back continued sometimes causing opisthotonos. Spasmodic attacks continued at intervals until July 27. After this he often had the so-called "starting pain" upon falling to sleep. On Sept. 22 a Taylor brace was applied and improvement from this on was rapid, but pain and stiffness in the right groin persisted for some time. Stiffness and limitation of the lumbar spine were the only objective signs when he returned to New York October 13. He still wears the brace.

Referring to the pathology of typhoid spine he said no autopsy had ever been reported. He believed it, however, an ostitis probably combined with a periostitis, and a probable neuritis caused by the inflammation of the bone and periosteum. This was generally considered to be the pathology of typhoid spine but Osler thought it a neurosis and reported six cases. Of the reported cases, 26 out of 30 were in males. The symptoms of the reported cases were much like those of lumbar Pott's disease, but more acute, and had the history of typhoid. Rest was the essential in treatment. Local application did little or no good.

Dr. Whitman agreed with Dr. Ely that cases of typhoid spine were not so very uncommon. He had seen a number and had one case now under treatment at the hospital, a child ten years of age.

Dr. V. P. Gibney considered the history presented by Dr. Ely as the most complete on record, and agreed with him as to the frequency of the affection. There are all degrees of typhoid spine, some very mild and similar to those described by Osler. He had never been able to trace any definite trauma as cause. He was surprised that no relief was experienced from the cautery and thought it was not properly used as he had obtained good results from it. He had nothing to add to the pathology. He thought the cases with kyphosis should not be included in the class of typhoid spines.

Dr. Whitman wished to know why cases were not to be included with typhoid spines in which kyphosis indicated destruction of the vertebræ.

Dr. Gibney answered that if the vertebræ were destroyed there would evidently be a destructive inflammation which was apparently not the case with typhoid spines, the condition being rather one of overgrowth of tissue. He was inclined to think that in the deformed cases a tuberculous element was present.

Dr. Sayre referred to a case of what he called "diphtheritic spine" following an attack of diphtheria. The disease left a slight nephritis and spinal disturbance attended with a certain amount of lateral deformity and interabdominal abscess formation, presumably the consequence of the diphtheritic infection.

Dr. Elliott asked Dr. Ely if in his research of the literature of typhoid spine he had found recorded marked relief following the application of a carefully applied support.

Dr. Ely replied that the effect was usually put down as being very quickly favorable. He regarded Dr. Gibney's remark about application of the cautery as a point well taken, and stated that the attending physician used the instrument at a black heat and made slow application—an operation the patient did not want to have repeated. He emphasized the necessity of rest in the treatment.

Arthritis.—Dr. A. A. Berg presented a case of acute serous arthritis. An acute osteomyelitis of the femur had developed and the case was seen three days after the onset of the disease. There was considerable effusion in the knee-joint. The medulla and lower epiphysis were opened and drained and the symptoms disappeared. There was no interference with function of the knee-joint.

Dr. Berg read this paper entitled The Joint Complications of Acute Pyogenic Osteomyelitis. He said: The joint manifestations that may complicate acute pyogenic osteomyelitis are divided into the sympathetic or pseudo-arthritis and the true inflammatory arthritis. The former accompany the very early stages of the bone infection, and are often the first and only physical signs of such an acute osteomyelitis. This explains why these cases are so frequently diagnosed as acute articular rheumatism. The true arthritis is due to bacterial invasion of the affected joint. The sympathetic or pseudo-arthritis adds in no way to the severity of the septic symptoms arising from the primary bone infections, and tends to spontaneous subsidence after drainage of the marrow canal. The true bacterial arthritis adds materially to the patients toxemia, itself requires surgical interference, and is apt to leave the joint seriously impaired in integrity and function.

The writer laid stress upon the periarthritis that accompanies the joint inflammation, whether the latter be of mild or severe form. It is of much importance diagnostically inasmuch as the acute rheumatic and gouty forms of arthritis are at first confined to the joint serosa, with little or no periarthritis. The varieties of joint inflammation and their symptoms were briefly described.

The writer has minutely described his practice in the treatment of these joint complications. The suppurative types of arthritis he divides into three cases in which a purulent exudate into the joint is the chief lesion, there being very little destructive change of the components of the joint, and into these in which the destructive inflammation of the ligaments, cartilages and serosa is far more important than the purulent exudation into the joint. For the former single or multiple incisions into the joint with evacuation of exudate and drainage by tube or gauze, yields very good results; in the latter he proposed that the suggestion of the Drs. Mays, for such conditions of the knee-joint, viz.: wide incision of the joint with partial dislocation of the bones, and dry gauze tamponade of the joint, with dressing in the dislocated position be applied to the other large joints. He had employed this method in three very severe cases of suppurative goneitis, with excellent results; and he felt assured that results equally satisfactory will follow the application to the other large joints. The technic of the operation for the knee and other joints was minutely described.

Dr. V. P. Gibney spoke of the interesting array of surgical facts presented by Dr. Berg and thought that the recognition of bone lesion by the earliest symptom, effusion into the joint, was a well-chosen point. In tuberculous arthritis of the knee, effusion into the joint is a well recognized symptom before the bone symptoms appear. He thought these cases were often mistaken for rheumatic and traumatic synovitis.

Dr. Elliott cited a case under his observation. The patient, a woman thirty-nine years old, had seven years ago, run a needle into her finger. The acute symptoms readily subsided. There were no more symptoms for six months at which time she became edematous and had pains in different parts of the body. The face, legs and arms became swollen and symptoms of general septicemia set in. The case was diagnosticated as neuritis in one of our large hospitals. The pain gradually subsided with evidence of a multiple arthritis involving the elbows, knees, shoulders, ankles and hips. The difficulty lasted about eight months and subsided leaving the knees anchylosed. In six months two popliteal abscesses formed and a quantity of pus was removed. When seen six months ago the legs were in contracture beyond a right angle. He had straightened the legs by brisement force. Dr. Elliott considered the interesting features of this case to be (1) that symptoms did not appear till six months after the trauma; (2) mistaking the case for one of neuritis, and (3) the faulty treatment in allowing the limbs to become contracted. The patient will in time be able to walk. He wished to ask Dr. Berg what was his opinion of the pathology of the joint lesion, as there was no pus in the joints and no known lesion in the ends of the bones.

Dr. Berg said he had seen such abscess formation after an osteo-periostitis. He stated that he was glad to learn that some chronic forms of joint lesion are attended with effusion in the early stages. He thought there was a great lack of knowledge among general practitioners concerning joint diseases as witnessed by the number of suppurative cases in the hospitals. He thought the type of sepsis after osteomyelitis was exceptionally rapid in its course.

THE NEW YORK ACADEMY OF MEDICINE.

Section on General Medicine.

Regular Monthly Meeting held Tuesday, December 16, 1902.

The Chairman, James K. Crook, M.D., in the Chair.

The scientific business of the evening was opened by a paper read by Dr. Edward Franklin Smith, containing a brief review of some of the etiological factors in intestinal digestion. Dr. Smith discussed the various pathological conditions that enter into the causation of intestinal indigestion from the failure of proper digestion in the stomach to the presence of the several forms of intestinal parasites whose irritation interferes with the digestive function. His paper will appear in full in a subsequent issue of the Medical News.

Intestinal Indigestion and Renal Disease.—Dr. Leonard Weber detailed a series of cases in which the relations between the absorption of imperfectly digested substances from the digestive tract to arterial degeneration and renal disease were illustrated.

The first case was a man of middle life with no special liability to worry, who did not speculate, preferring, as he said, always to buy outright any stocks he desired to hold for profit. For some years he had suffered from chronic constipation and was bothered by frequent distention of the stomach. At times he suffered considerable inconvenience from hemorrhoids which did not bleed to the extent to cause any serious inconvenience.

Relief of Symptoms.—Under proper diet, certain simple drugs, massage of the abdominal muscles, careful applications of electricity and simple pills of aloin, the constipation improved and with it the general condition, while most of the symptoms of discomfort disappeared. This relief of symptoms continued for some time and then the urine became more abundant than before, this being especially noticeable at night, so that the patient had to get up several times to urinate. Besides the increase in quantity there was a decrease in the specific gravity of the urine and albumin could be detected in most of the specimens by ordinary tests. It was evident that interstitial nephritis had commenced and after a time a general arterio-sclerosis was noted and continued to advance notwithstanding the exercise of the greatest care with regard to the dietary and living regulations. The man died of cerebral hemiplegia at the age of sixty-three. The second patient, of whom Dr. Weber spoke, was the only one of his family who lived beyond sixty. He took spirits in moderate amount, but denied venereal history and all excesses. He smoked to a considerable extent and as he was suffering from an acute bronchial catarrh, he was advised to give up smoking which he promised to do but did not. In 1885 his urine was good, having been examined by the medical examiner of a life insurance company, but three years later, in 1888, it was increased beyond the normal in amount and was of low specific gravity. His chronic intestinal dyspepsia had continued for many years, and it seems evident, was the causal factor in the production of the kidney changes, for he was now evidently suffering from chronic interstitial nephritis. In the third case a man of fifty had suffered for many years from intestinal disturbance with alternate constipation and tendencies to diarrhea. When he first came under treatment his bowels were rather loose and there was considerable flatulence. He used wine and beer to an immoderate extent and tobacco more than was good for him. For a time he gave up his bad habits in these matters and improved somewhat in health. His symptoms recurred and became worse and he became quite emaciated. Three years afterwards he died having suffered all the symptoms of advanced kidney disease, apparently brought on by the toxemia induced by intestinal dyspepsia.

Intestinal Toxins and Nephritis.—It would not be surprising to find that toxic substances, absorbed from the digestive tract, might cause irritative inflammatory disturbances of the kidneys. Investigators in children's diseases have pointed out that acute cholera infantum is very frequently complicated by acute nephritis and that the fatal termination of the disease is not infrequently a uremic coma. It is not too much to conclude, therefore, that chronic nephritis might be caused by the presence of somewhat less virulent toxins in the circulation, whose irritation had been continued for a longer time.

Increase of Nephritis.—There is no doubt in the minds of most physicians of large experience that nephritis is much more common at the present time than it was a few years ago. Many reasons have been advanced for this. The best one seems to be that the greater prevalence of good living has been followed by much disturbance of the intestinal tract and as a consequence by the absorption of irritating materials that have to be eliminated by the kidneys with inflammatory results. There is no doubt that the beginning of chronic nephritis is not infrequently an infectious disease. Infectious diseases are rarer than they used to be. When individuals have had a serious infectious disease in childhood, however, which has somewhat impaired their renal eliminative powers the presence of intestinal toxins in the circulation later in life is sure to be followed by very serious kidney disturbance.

Treatment of Chronic Nephritis.—Dr. Weber agrees with the French school of therapeutics who insist on the value of small doses of potassium iodide, even in advanced chronic nephritis. In some cases the drug does good because there is a syphilitic element in the case which makes the kidney condition worse. The usual dose employed however is only five grains of the iodide three times a day and this would not of itself suffice to affect syphilitic lesions to any extent. If syphilis is known to be present and if it is suspected of being an important factor in the production of changes in the kidneys then much larger doses of the drug should be employed. At least 30 grains to a dram three times a day. The small doses prove, however, of great service in the treatment of non-specific nephritis. Professor Vierordt after very careful investigation of the question of the action of potassium iodide in these cases, an investigation which he began with the idea that he would prove it to be of no service, says that there can not be the slightest doubt of the benefit derived from these small repeated doses of potassium iodide. The effect of the drug is to lessen the tendency to the formation of connective tissue in the kidney, to lead to the reabsorption of incompletely formed connective tissue and to dissolve broken down material from the system that is proving a source of irritation and neutralize its toxic effect upon the kidney substance. Besides this it serves to soften the arteries and so makes the general circulation better and consequently also the circulation for the kidneys.

True Auto-Intoxication.—The absorption of toxic material from the intestines is often spoken of as autotoxemia. As a matter of fact, however, the intestines are outside of the body proper and so it can not be properly spoken of as a self-poisoning. There is, however, a true autotoxemia due to the production of substances in the tissues themselves that are toxic for other parts of the organism. Such autotoxins occur quite abundantly in certain constitutional diseases, notably gout and affections due to the uric acid diathesis. In diabetes also, especially that form known as pancreatic diabetes and in which diabetic coma is so liable to assert itself, there is a distinct tendency to the production of poisonous substances as a result of errors of metabolism. Uremic coma is a manifestation of the same kind being due to something much more serious than the mere prevention of elimination through the kidneys.

Autotoxemia and Ductless Glands.—These true autotoxemias are especially likely to occur in connection with pathological conditions of the ductless glands. In Graves' disease for instance, or in Addison's disease, their effects on the general system are readily seen. Myxedema and its symptoms are due to errors of metabolism caused by deficiency of the secretion of the thyroid glands. Von Noorden has expressed the opinion that the ovaries have an internal secretion as well as the pancreas and that obstinate cases of chlorosis in young women are usually due to absence or deficiency of the internal function of the ovaries. Blum, a careful investigator, showed experimentally that the removal of the thyroid gland from animals was followed by death after some months from chronic interstitial nephritis. The reason for this is evidently the attempt of the kidney to eliminate certain substances, which are normally neutralized in the system by the secretion of the thyroid gland.

Dr. Weber is of the opinion then that nephritis is not infrequently due to the excretion of poisons manufactured within the system as well as those which are absorbed from the digestive tract at times when normal digestive processes are disturbed. At the same time there is not infrequently a development of arterio-sclerosis, which by interfering with the circulation acts as a vicious circle in causing further deterioration of the kidney condition.

Diagnosis of Intestinal Indigestion.—Dr. John C. Hemmeter, of Baltimore, then read a paper on the treatment of intestinal digestion with preliminary remarks on its diagnosis. This paper will appear in a subsequent issue of the Medical News. By request of the Chairman, Dr. Hemmeter prefaced his remarks by some hints as to the various forms of intestinal indigestion and their differentiation. The important consideration, he said, with regard to all affections of the digestive tract is "Are they due to some structural change, or are they only functional or chemical disturbances of digestive processes, the architecture of the intestinal wall remaining unaltered?" He said that the subject of intestinal indigestion in general has not been treated by the great authorities on the subject of diseases of the intestines, because under various forms it was discusesd in the different chapters of special diseases of the intestines.

Factors for Diagnosis.—The diagnosis of the various phases of intestinal indigestion will never be complete until we know much more than at present about the two factors that would provide a proper basis for our knowledge. These are the food that is taken and its value and the feces that are excreted after the taking of that food. Without a good knowledge of these two elements our information as to the cause and course of intestinal indigestion must be imperfect. The feces are especially important. So far there has been a decided objection on the part of very many practitioners to the careful investigation of the chemistry of feces. As a matter of fact with modern facilities and technic, the investigation of feces is not offensive. Certainly not more than the bacteriological examination of tuberculous sputum, nor necessarily any more deterrent than the proper examination of the urine. Dr. Hemmeter said that the term intestinal dyspepsia is a misnomer. Dyspepsia being a condition of gastric indigestion has the true etymological significance of failure of peptic digestion. Needless to say, however, peptic digestion has no place in the intestines and therefore to talk of intestinal dyspepsia is more or less absurd. Dystrypsia is a better term, since it is usually the digestive ferment from the pancreas that is morbidly altered or absent in cases of so-called intestinal indigestion.

Foods in the Etiology of Indigestion.—Dr. W. W. Van Valzah said in opening the discussion that one of the main causes of indigestion of any form must be looked for from the standpoint of the foods consumed. Flesh, starch and fat or accessory food materials are very differently digested by different individuals. When there is difficulty in the digestion of albumin this is followed by the appearance of indican in the urine. Undoubtedly Dr. Weber's claim of the connection between chronic indigestion and chronic nephritis is supported by the experience of stomach specialists who find that irritant substances get into the urine during the course of indigestion. The method of examining the stools by finding the amount of fermentation of which they are capable is of value as indicating that undigested starch is present and as is well known, this may cause a tendency to diarrhea. When fats appear in the stools it is not unusual to find that there is also some passive congestion of the liver; the appearance of the fats being due either to the consumption of too much fat which reacts upon the liver circulation, causing it to stagnate, or hepatic congestion for some other reason causes absence of the fatsplitting ferments and emulsifying properties of the bile and so hampers the proper digestion of fat.

Dr. Van Valzah considers that not a little of the difficulty of the digestion of starches and cereals could be overcome by more thorough cooking than is at present the custom. Patients who can not eat potatoes after ordinary cooking, are often able to digest them very readily if they are doubly cooked before being served, that is, after having been boiled they are baked before being served. The cereals are fortunately becoming rather a favorite article of diet but need to be cooked much more than is at present the custom. As a rule they should be allowed to simmer all night and then thoroughly cooked for a half hour in the morning before being eaten. Some of the cereals that are being put on the market have the advantage of being very thoroughly cooked before being packed for sale.

Harmful and Beneficial Drugs.—There is no doubt that many drugs ordinarily prescribed for digestive disturbances do more harm than good. The so-called intestinal antiseptics besides preventing the growth of bacteria, also prevent the fermentative processes of true digestion. The best intestinal antiseptic in Dr. Van Valzah's opinion is calomel. This should be given in small doses, as one-fortieth of a grain, one to four times every day. If it has a tendency to hurry food through the intestines, smaller doses should be employed. Some patients will stand, however, one-twentieth of a grain several times a day. If patients are sensitive to calomel, the protiodide of mercury should be used. This drug does not produce irritation and can be used with confidence. Ichthyol is another very useful drug, and should be given about four drops—one to four times a day on an empty stomach. It will prevent many disturbing fermentative and putrefactive processes that have proved annoying for long periods. As men and women grow older they must be taught and advised and finally ordered so to change their lives as to give themselves some surcease from the anxiety of younger years. Men are apt to go on accumulating more and more responsibilities. Their work must be limited, they must be taught to take proper recreation, they must be made to see the necessities for outdoor air and sufficient exercise. It has been well said that the doctor's success in treating chronic intestinal indigestion depends quite as much on his treatment of the patient from the chin up as from the chin down. The doctor must assert his will power and if necessary bulldoze the patient into seeing the necessity for relieving himself of some of his more serious responsibilities.

Psychical Influences and Reflex Secretion.—Dr. Morris Manges said that the influence of the psychical secretion of gastric juice which has been shown experimentally to occur by Pawlow can not be overestimated. We have no explanation of it, but its existence is well understood and has of course been realized even before its experimental demonstration. Certain foods make the mouth water. On the other hand it must not be forgotten that the act of chewing has a reflex influence on the secretion of gastric juice. The amount of chewing done influences somewhat the amount of the secretion. People who fail to chew not only fail to mix the saliva properly with their food, but fail to send up the impulses to higher centers, which act reflexly in producing gastric secretion. It must not be forgotten that in merely nervous conditions, there may be such wide variations in gastric secretion as to give achylia, or heterochylia or hyperchlorhydria and hypochlorhydria within a few hours, or within a few days of each other. Some idea of the obscurity in which the subject of intestinal indigestion is as yet wrapped can be gathered from the fact that we are not sure whether peristalsis and its pathological conditions may not be more important in the production of intestinal dyspepsia than are secretory disturbances. Food moves too slowly and is subject to fermentations that could not otherwise occur, or is hurried along too rapidly and fails of proper absorption, or fails to be mixed with certain secretions that produce definite changes and prevent accessory ferment tive processes. There is a whole school of specialists on digestive diseases who have come to realize the importance of motor disturbances in these matters.

Intestinal Indigestion and Nephritis.—Dr. Manges considers that intestinal indigestion is frequently the source of nephritis. The presence of the irritant substances in the blood also gives rise to arterio-sclerosis. The best proof that such toxic material may readily find its way into the blood is found in the fact that bacteria occur in the urine where the lesions, as in typhoid fever, are localized in the intestinal tract. Bacteriuria may exist for a long time after typhoid fever. On the other hand, where bacteria have been found in the urine with no explanation for their origin and when all other means of causing them to disappear have been tried in vain, they have disappeared after irrigation of the rectum.

Intestinal Dyspepsia.—Dr. Max Einhorn said that intestinal dyspepsia is not an unsuitable term. Dyspepsia, from the Greek, means bad digestion. The original verb peptein in Greek meant to digest, as a general process, originally to boil as if the digestion within the body resembled the solution of substances in water by boiling. Only later did pepsin come to be limited to the digestive ferments secreted by the stomach walls. One might talk with perfect propriety then of intestinal dyspepsia. On the other hand, the word dystrypsia, suggested by Dr. Hemmeter, is not very suitable, since intestinal digestion is not all accomplished by the trypsin of the pancreas. There are many other ferments. With regard to intestinal indigestion, Dr. Einhorn considers that one of the most important factors to be considered is the disturbance of stomach digestion. If food comes to the intestine improperly prepared it will cause disturbance of the intestinal digestive processes.

Usefulness of Intestinal Disinfectants.—Dr. Beverly Robinson said that while many intestinal disinfectants are undoubtedly harmful, it would be wrong to insist that all disinfectants are harmful and a mistake to do away with their use. There are at least three disinfectant substances that Dr. Robinson has found of excellent service. These are, first, charcoal, which is useful especially in offensive breath and eructations from the stomach; second, the insoluble salts of bismuth, which are not only antiseptic, but serve to allay irritation; the third is creosote, given in small doses is an efficient intestinal antiseptic. In large doses it often does harm. Calomel is also an excellent intestinal antiseptic. Common sense must be used in the employment of these remedies. They will not, of course, completely overcome fermentative and putrefactive processes. We need not expect to distil eau de cologne from the intestinal contents, but we may do very much good.

Cooking and Indigestion.—Dr. Robinson is of the opinion that if more attention were paid to proper cooking there would be much less digestive disturbance. Bad cooks do much more harm than doctors can ever undo. It would be much better for the poor of our cities to have opportunities for learning the proper cooking of food, rather than opportunities to read the latest novel. The endowment of cooking schools will do much more for humanity than the endowment of libraries.

Etiological Factors of Intestinal Indigestion.—Dr. William H. Porter said that first there is too much food and often of improper kinds taken. Secondly, there is insufficient respiration because of lack of exercise, and third, there are nervous disturbances that inhibit secretion and make peristalsis irregular. The overeating and the eating of food that is for the individual indigestible is, of course, well recognized. Lack of respiration, however, with a consequent lack of oxidation, is not so often considered a factor in digestive disturbances. The system becomes overloaded with material that renders all function torpid and its elimination through the kidneys causes kidney irritation and finally chronic inflammatory changes. The overeating of starches and fats overcharges the system with hydrocarbons. These can only be used up by oxydizing processes within the body. If respiration is limited to that which takes place in sedentary occupations, they are not properly consumed. On the other hand, if much oxygen is used up in the oxidation of carbon, proteid material, which is even more dangerous, does not undergo proper changes and becomes irritant toxic material.

Dr. Hemmeter, in closing the discussion, said that he was glad to have brought out so many views. If his paper should suggest the necessity for more careful information with regard to details of diet and the need of more diligent investigation of the feces then he would feel that his best wishes were accomplished.

BOOK REVIEWS.

A MANUAL OF MEDICINE. Edited by W. H. ALLCHIN, M.D., Lond., F.R.C.P., F.R.S.Ed., Senior Physician and Lecturer on Clinical Medicine, Westminster Hospital, etc. Vol. IV. DISEASES OF THE RESPIRATORY AND OF THE CIRCULATORY SYSTEMS. The Macmillan Company, New York.

THE present volume is well up to the high standard set by preceding volumes of Allchin's Manual. It constitutes an excellent handbook of really handy size on the important departments of diseases of the respiratory and of the circulatory systems. The article on pulmonary tuberculosis in the present volume seems to deserve special mention because of its conciseness and its completeness and the many practical hints for treatment. All of the modern suggestions as to the therapeutics of consumption are discussed and their value very succinctly and clearly stated. The use of tuberculin as a diagnostic agent receives a page of notice, that considering the present trend of feeling with regard to the use of this material seems scarcely justified.

The chapters on the heart are very well put and constitute an excellent compendium of a difficult subject. Allchin's volumes very well reserve a place in the library of the busy practitioner for they present subjects in the way that makes them very readily consulted in the few minutes that a busy man may have to spare to look up an especially difficult case.

The defect that is apt to be noticeable in most works from many hands is not entirely lacking here. For instance we fail to find any suitable exposition of the subject of paroxysmal tachycardia, though this topic is surely of sufficient importance to justify it. It would seem to have been more or less lost sight of.

THE TREATMENT OF TABETIC ATAXIA BY MEANS OF SYSTEMATIC EXERCISE. By Dr. H. S. FRENKEL, Medical Superintendent of the Sanatorium "Freihof" in Heiden (Switzerland). Translated and Edited by L. FREYBERGER, M.D. P. Blakiston's Son & Co., Philadelphia.

THE Frenkel treatment of tabes dorsalis has been a household possession of the neurologists for many years. We are glad to welcome this translation that will place the general practitioner in the position to carry out systematically a series of procedures that without cavil have been demonstrated to be of supreme importance in the treatment of this condition.

Of the principle laid down in the treatment there is little to say. It has come to stay and there is little doubt but that its failures have been largely due to lack of careful and thorough technic.

It is particularly fortunate, therefore, that this work as presented should take up this subject of technic so fully and comprehensively. We have rarely seen a work so exhaustively and intelligently illustrated. Every step in the process of muscle training is taken up and illustrated by excellent halftone reproductions. Practically nothing is left to the imagination—the whole series of processes are reproduced so that the beginner may learn.

A careful and full discussion of muscular coordination precedes the chapters on treatment; thus from the theoretical, practical, and illustrative features the work is complete.

THE DISEASES OF THE NOSE, THROAT, AND EAR. By CHARLES PREVOST GRAYSON, A.M., M.D., Lecturer on Laryngology and Rhinology in the Medical Department of the University of Pennsylvania; Physician-in-charge of the Department for Diseases of the Nose and Throat in the Hospital of the University of Pennsylvania; Laryngologist and Otologist to the Philadelphia Hospital. Lea Brothers & Co., Philadelphia and New York.

IN the first place, from the publishers' standpoint, type, leading, paper, illustrations, etc., this book is exquisite in its make-up. The author's preface well declares the character of the book and we take no exception to the claim there made that "it is the rhinologist who holds the key to the prophylaxis of the ear," *i.e.*, all other things being equal.

As to the subject-matter, the author has not erred in giving a too wordy treatment of any subject; he has succeeded admirably in being brief, without being as a rule too brief, giving all important subjects due consideration. There is no cramped use of stilted English, yet this is clearly not a book of reference, though it aims at being complete in itself. We think the author has treated some subjects very scantily, *e.g.*, the supremely important sinus diseases of the nose. What is given is good, but it leaves much unsaid, except for students only, who cannot compass any subject thoroughly, in the very nature of things. We are forced to say that this is in the main a teacher's text-book to students. It is the text of his particular method, in helpful detail of treatment that enhances its value to them. It is written with great carefulness and beauty of diction.

The author has striven to do well what was embraced within his plan, and we accord him praise for having done it. He teaches little that is new, but he is a safe and helpful teacher and gives warnings against gross, unscientific and harmful methods of practice. For example, he condemns the too prevalent use of the galvanocautery, which is commendable. On the other hand, he admits to commendation the treatment by electrolysis in chronic catarrhal otitis media though this treatment is yet only in an experimental stage.

A minor point in pathology we notice in which the author perpetuates the errors of his predecessors, viz.: the classification of nasal polypi as myomata. We quote with hearty approval, "In treatment it is desirable that we have a well-defined idea of what we wish to accomplish:" and, "There is no mystery about the success that comes of being thorough, nor is there anything surprising in the inevitable failure that attends carelessness."

TEXT-BOOK OF ANATOMY. By American Authors. Edited by FREDERIC HENRY GERRISH, M.D., Professor of Anatomy in the Medical School of Maine, Bowdoin College. Second Edition. Lea Brothers & Co., Philadelphia and New York.

THESE authors have been Arthur Dean Bevan, of Rush Medical College, who has described the Arteries; J. P. McMurrich, of the University of Michigan, who has written the chapter on Embryology; William Keiller, of the University of Texas, who has contributed the chapters on the Nerves, the Skin, the Nose, and the Eye; George David Stewart of the University and Bellevue Medical College, who takes up the Organs of Generation; George Woolsey of Cornell Medical College, who contributes the Bones, the Articulations and the Veins, and F. H. Gerrish, who writes the major portion of the volume, describing the Elementary tissues, the Muscles, the Fasciæ, the Heart, the Lymphatic System, the Cerebro-spinal Axis, the Tongue, the Ear, the Organs of Digestion, the Organs of Respiration, the Urinary System, the Ductless Glands, and Relational and Practical Anatomy.

The present volume comes a trifle short of 1,000 pages and the reviewer is heartily glad that his student days are over and that he does not have to learn the contents of these pages. At the same time there is regret mingled with the joy in that he did not have such an excellent text-book to study and should Quixotism rule the day it may see him plodding at this volume, which by its very interest almost compels one to go back to the pursuits of the first year at medical college.

While it is doubtful whether the ancient generations will ever lose their veneration and regard for the dissecting-room-stained "Gray" this new anatomy by many authors bids fair to occupy a similar place in the regard of the present-day student.

Its illustrative features, largely adapted from that Continental classic Testut, are beyond comparison and the text is accurate and yet as concise as modern anatomical research will permit. Gerrish's Anatomy has certainly won for itself a place of high rank on its merits.

PHYSICIAN'S VISITING LIST (Lindsay & Blakiston's). For 1903. P. Blakiston's Son & Co., Philadelphia.

THIS neat and compact little book, now in its fifty-second year, offers to the practitioner excellent facilities for recording in a simple manner the usual memoranda relating to his routine duties. The book is bound in flexible leather, suitable for the pocket, and in addition to blank pages to be devoted to records of visits, accounts, etc., contains also a complete table of dosage, a chapter on incompatibility, system of measures and weights, signs of death, list of poisons and antidotes, and a table for converting English and metric systems.

PATHOLOGIE UND THERAPIE DER HERZNEUROSEN UND DER FUNCTIONELLEN KREISLAUFSTÖRUNGEN. Von Dr. AUGUST HOFFMANN in Düsseldorf. J. F. Bergmann, Wiesbaden. G. E. Stechert, New York.

Heart neuroses have always interested the masters of medicine both because of their intrinsic importance and because of the difficulties surrounding their diagnosis. To distinguish between a neurosis and a functional disturbance of the heart-muscle, or to decide when a long-standing neurosis has passed into a muscular affection, is often among the most difficult of clinical problems. A fair number of persons exhibiting functional disturbances reach a stage where objective signs of changes in the heart itself seem clear, yet of these some become worse and exhibit the symptoms of lack of compensation, others remain in a stationary condition, and still others improve and eventually reach a normal condition again. The question then arises: "Is the impaired heart-action functional or organic?"

It is the plan of this book to describe those diseases of the circulatory organs which run their course without demonstrable pathological changes in the valves, the musculature, or the blood-vessels; it being recognized, however, that a diseased heart may exhibit functional disturbances which are not dependent upon the heart lesion. The author has done his work well, and has presented us with an array of facts and theories which show great knowledge and careful thought. The work, therefore, may be welcomed as a valuable contribution to cardiac literature.

The subject-matter is divided into two sections, the first covering anatomy, physiology, methods of research, and the symptoms, physical signs, prognosis and treatment of the pure neuroses, including bradycardia, tachycardia and arrythmia. The second part deals with the functional disturbances of the heart dependent on disease of other organs, poisons, fever, constitutional diseases, organic and functional nervous diseases, Graves' disease, the Adams-Stokes syndrome, Raynaud's disease, erythromelalgia, etc.

A comprehensive bibliography accompanies each chapter, and a fair index renders the great mass of material readily accessible.

BOOKS RECEIVED.

The MEDICAL NEWS *acknowledges the receipt of the following new publications. Reviews of those possessing special interest for the readers of the* MEDICAL NEWS *will shortly appear.*

ANNUAL REPORT, DEPARTMENT OF HEALTH, CITY OF NEW YORK. 1897-1901. New York.

MEDICAL MICROSCOPY. By Dr. T. E. Oertel. 8vo, 362 pages. Illustrated. P. Blakiston's Son & Co., Philadelphia.

REGIONAL MINOR SURGERY. By Dr. G. G. Van Schaick. 12mo, 226 pages. Illustrated. The International Journal of Surgery Co., New York.

MALARIAL FEVER. Its Cause; Prevention and Treatment. By Dr. Ronald Ross. Ninth Edition. 8vo, 68 pages. Longmans, Green & Co. New York.

PRACTICAL ANATOMY. A Manual of Dissection. Edited by J. E. Lane. Ninth Edition, 8vo, 696 pages. Illustrated. P. Blakiston's Son & Co., Philadelphia.

THE MEDICAL NEWS.

A WEEKLY JOURNAL OF MEDICAL SCIENCE.

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ORIGINAL ARTICLES.

CASES ILLUSTRATING THE THERAPEUTIC USES OF THE ROENTGEN RAYS.*

BY SAMUEL BERESFORD CHILDS, A.B., M.D.,
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PROFESSOR OF ANATOMY, DENVER AND GROSS COLLEGE OF MEDICINE.

THE value of the X-ray as an aid to surgery, great as it is, was easily discernible the moment Roentgen announced his discovery; but the value of the X-ray as a remedial agent in the treatment of disease was at the time little suspected and was to be determined only through time and experience.

It is the purpose of this paper to set before you some of the results of my experience with the X-ray in the treatment of various forms of disease, and particularly of malignant lesions of the skin. The cases here reported represent the average results that I have obtained.

Case I.—Mrs. H., aged forty-five years. Referred by Dr. C. A. Powers. Epithelioma of the external surface of right ala of nose. First appeared in 1892, since which time various treatments have been employed, such as caustic plasters, pastes, curetting and cauterization. Temporary healing followed some of the treatments, but a recurrence took place within a comparatively short space of time. When the case came under my observation, April 25, 1902, there was an ulcer on an indurated base involving the external surface of the right ala of the nose and dipping down into the nostril. The area surrounding the ulcer was very much congested, giving a particularly angry appearance to the entire surface. A heavy crust or scab covered the ulcer. This condition had been developing for two years.

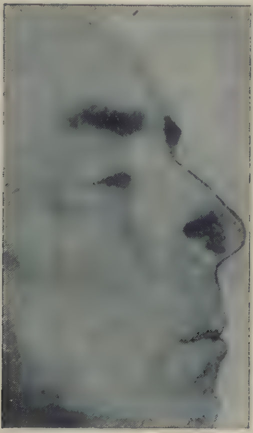

Fig. 1.

X-ray exposures commenced April 26, 1902, and continued until June 17, when the entire area was healed and has continued so to the present time. Forty-two treatments were given.

Case II.—Mr. R., aged sixty-one years. Referred by Dr. P. V. Carlin. Epithelioma of the external surface of the right ala of the nose. Transverse diameter of ulcer two cm., vertical 1.5 cm. Growth first appeared in 1890. Was excised by one of the prominent surgeons of Chicago in 1894; reappeared in 1897 and gradually extended to the size shown by Fig. 1. X-ray treatment commenced May 19, 1902, and continued to June 23. After 30 exposures, a firm scab covered the ulcer. The scab came off July 22, leaving the underlying surface perfectly healed as shown in Fig. 2.

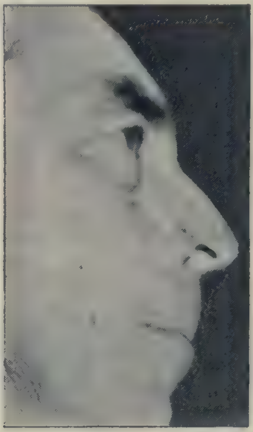

Fig. 2.

Case III.—Miss R., aged twenty-four years. Referred by Dr. C. A. Graham. Lupus erythematosus. Area involved: the bridge of nose, tip of nose and upper lip in median line near juncture of mucous membrane. History of five years' duration in which time many different remedies were ineffectually tried. Family history: mother died of tuberculosis, one sister has scrofula, and one brother is below par in intellectual ability. X-ray treatment of nose commenced May 15. May 30, scab came from bridge of nose, leaving healthy, pink skin beneath. First exposure given to the lip May 20. June 10, the three areas just mentioned were covered by healthy skin. The bridge of the nose had eight exposures, the tip 10 and the lip eight. Entire period covered by treatment, May 15 to June 2.

Case IV.—Mrs. M., aged sixty-five years. Referred by Dr. G. B. Packard. Epithelioma of right cheek. Lesion was first noticed one year ago. An ulcer soon developed. This healed under treatment, but reappeared in July, 1902, and persisted in spite of treatment until the case came under my observation August 27. At that date there was present below and internal to the malar prominence an ulcer about one cm. in diameter situated upon an inflamed, indurated base. A thick crust covered the ulcer. This condition is shown in Fig. 3. Treatment was begun August 27 and continued until September 8. Eleven exposures were given which established the healing process, and the improvement continued without interruption. The scab came away September 28, leaving the area entirely healed. Present condition is shown by Fig. 4.

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*Read before the Denver and Arapahoe Medical Society, Denver, Colo., Oct. 7, 1902.

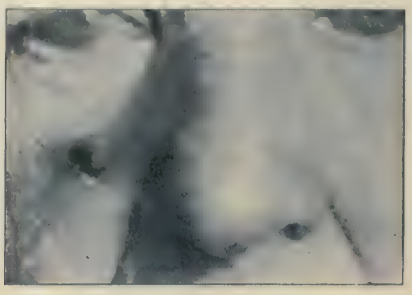

Fig. 3.

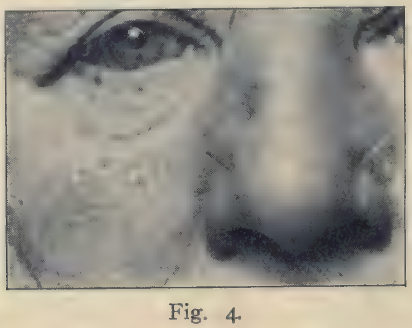

Fig. 4.

Case V.—Mrs. F., aged thirty-five years. Referred by Dr. S. G. Bonney. Tuberculous glands of right side of neck. The glands at the posterior border of the sterno-mastoid in the upper half of neck were much enlarged and a mass composed of two or three glands matted together projected very prominently below and behind the lobe of the ear. The chain in front of the trapezius was also enlarged. This condition of the glands had persisted for six years, slight variations in the size taking place according to the general health of the patient. X-ray treatments commenced May 2. The glands in the upper part of the neck received 24 exposures and the lower chain in front of the trapezius received 16. Treatment was discontinued June 16, as the patient left the city for the summer. She was examined by Dr. Bonney on this date, who reported a diminution of the size of the glands of at least one half. During the summer the glands have continued to subside and at this date, nearly four months after cessation of treatment, are scarcely perceptible.

Case VI.—Mr. G., aged sixty-three years. Referred by Dr. J. M. Foster. Lupus erythematosus. A number of reddish brown, discrete patches from one-half to two cm. in diameter with dry adherent scales, involved the skin from the temporal region to the lower border of the superior maxilla on either side. The skin of the nose and ears was similarly affected. Extending outward from the malar prominence on each side were a number of discrete, pearly scars, marking the sites of former lesions. This affection had persisted since 1890, and during the greater part of the time the best known methods of treatment had been employed. X-ray exposures were commenced June 28 and continued to August 26. During this time 53 treatments were given. One area after another received each from 16 to 18 exposures. The patient left the city August 26, at which time the area first exposed was smooth and free from patches. On his return September 25, all the areas that had been treated were smooth and the skin presented a healthy appearance with the exception of the scars above mentioned. There has been no sign of recurrence in the healed regions. There are a few spots that I have not exposed to the rays. I shall follow out the same treatment with these and expect a complete recovery.

Case VII.—Mrs. A., aged forty-nine years. Referred by Dr. C. A. Powers. Secondary carcinoma of spine with recurrent nodules in right breast area. A complete Halsted operation for far advanced medullary cancer of right breast and axillary contents had been performed five months previously and the highest subclavicular glands were found upon microscopic examination to be malignant. Pain developed in the lower dorsal region and became most intense, so that the position of the patient in bed could not be changed without causing great suffering. Morphine gave some relief, but its use was unsatisfactory, as it gave rise to unpleasant symptoms. X-ray treatments commenced April 19. Daily exposures were given to the lower dorsal and upper lumbar regions, and on April 28, after nine treatments, the spinal pain entirely disappeared and the patient remained free from it during the subsequent course of the disease. Severe intercostal pains came on at a later stage, and these also yielded to the influence of the rays. Nodules varying in diameter from three to eight mm. had developed about the scar area within a brief space of time and nearly encircled it. Under continued treatment the entire area became softer. Some of the nodules disappeared and the growth of the remaining ones was checked. Cachexia became well marked in the case and a fatal termination took place about the middle of July. The X-rays proved of the utmost comfort to the patient and enabled her to pass the last two months of life free from the intense suffering which generally accompanies spinal carcinoma.

Case VIII.—Mrs. A., aged seventy-seven years. Referred by Dr. P. V. Carlin. Epithelioma of the cheek. Four years ago the growth appeared in the form of little hard warts beneath the left eye. These increased in size but occasioned no particular discomfort until one year ago when they began to grow rapidly and coalesced into a prominent mass situated upon an inflamed areola. When she was referred to me this mass was about two cm. in diameter and hard on the edges, but broken down in the center, the ulcer being covered with a crust. This condition is shown in Fig. 5.

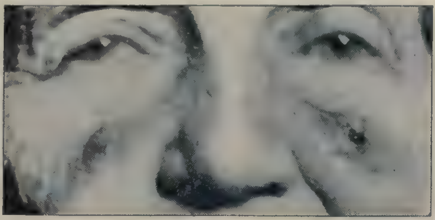

Fig. 5.

There was also present under the right eye a scaly patch one cm. in longest diameter. An operation for the removal of the growth had been advised, but the patient would not consent to any surgical procedure.

X-ray treatment commenced July 31, and up to the present time 26 exposures have been given. The present condition is shown in Fig. 6. This case is still under treatment, but the areas are so nearly healed that I feel warranted in expecting a complete recovery.

Fig. 6.

Case IX.—While observing the work done with the X-rays by some of the leading men in Chicago last April, I was greatly impressed with the confidence expressed in the ability of the rays to benefit pulmonary tuberculosis. As I had been able to produce beneficial effects by the rays upon tuberculous glands, I determined to try them upon the first favorable case of tuberculous lung infection that presented itself. The case is as follows: Mrs. S., aged thirty-nine years. Pulmonary tuberculosis. Family history negative. Disease contracted in Chicago in the spring of 1901. Patient came to Denver shortly after. Has been under the care of one of our leading specialists the greater part of the time. Consulted me May 24, 1902, about a year after her arrival in Colorado. Was coughing and expectorating freely in the morning and after each meal. Tubercle bacilli were present in the sputum. Weight about normal. No elevation of temperature was detected. Both apices were affected. The left was consolidated to the second rib. Anteriorly prolonged expiration and bronchial breathing were present in this area and moist râles could be plainly heard below the clavicle, especially numerous near its juncture with the sternum. Moist râles were detected posteriorly at the superior angle of the scapula in both the right and left lung. X-ray exposures were commenced May 24, and from that time to September 26, 76 treatments were given. The chest and back were exposed on alternate days, and the rays had sufficient penetration to make the contents of the thorax plainly visible on the fluoroscopic screen. By August 6, nine weeks after the exposures were commenced, expectoration had entirely ceased and there has been no recurrence of it. The signs of moisture had disappeared from the lungs September 26. The consolidation and bronchial breathing were still present. Realizing that it is impossible to draw conclusions of value from one case of pulmonary tuberculosis, I submit this case for what it is worth.

Case X.—Miss C., aged twenty-six years. Lupus erythematosus. Area affected: end of nose, right cheek (size of half-dollar) and upper lip below nostril, the latter patch one-half cm. in diameter. Disease appeared in 1897 on the tip of nose and in 1900 on the cheek. Family history negative, except that mother's sister died of tuberculosis. Electric needle treatment and caustic plasters had produced some improvement in the areas. Patient came to me June 21, at which time the areas above mentioned were much reddened and the patch on the lip was covered with a fine, whitish scale. A number of whitish scars were present in the cheek area. Thirty-one exposures were given, last treatment July 22. Present condition: the redness has entirely disappeared, and the skin with the exception of the scars above mentioned has assumed a normal appearance.

Case XI.—Mrs. G., aged sixty years. Primary epithelioma of lower lip. Growth appeared one year ago and gradually increased in size. There was an ulcerated cauliflower excrescence of the mucous membrane of the right half of the lower lip, extending from the junction of the skin and mucous membrane well inside the mouth. The base of growth was much indurated, the induration extending over the entire half of the lip. This condition is well shown in Fig. 7. Excision of the growth had been advised, but the patient declined surgical interference. X-ray

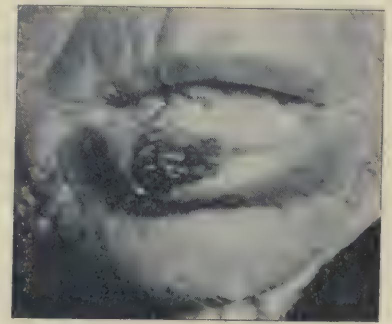

Fig. 7.

treatment commenced August 22 and continued daily until September 7. Sixteen exposures were given. Improvement has been very rapid, as shown in Fig. 8. There is still some slight induration present, which, however, is gradually lessening. The ulcer has entirely disappeared.

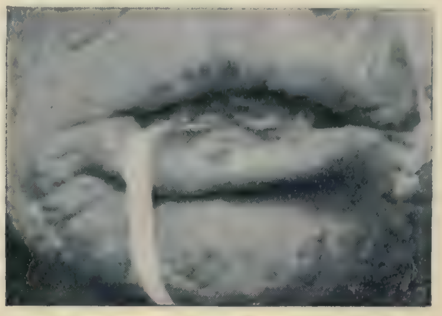

Fig. 8.

Case XII.—Mr. S., aged fifty-four years. Chronic eczema of 12 years' duration. Perineum and adjoining area of left thigh were involved. Skin was much thickened, roughened, scaly and particularly leathery to the touch. Six or eight red papules were present, also excoriations made by scratching with finger nails. Most intense itching at night. Patient had consulted many doctors and tried many remedies with only temporary relief, a few hours being the longest time the patient had been free from the itching during the entire twelve years. X-rays exposures commenced July 1, and six treatments were given to July 8. Patient then went on a fishing trip and reported again July 18. From the 8th of July there had been no itching sensation present. A treatment was given July 18 and one more July 19, making in all a total of eight treatments. The papules, excoriations and roughness had all disappeared by this date. The skin was much softer and had a normal appearance. There has been no recurrence of the trouble in any form.

Case XIII.—Mr. E., aged thirty-three years. Referred by Dr. S. G. Bonney. Hodgkin's disease. In November, 1897, the patient first noticed a small enlargement of a gland above the clavicle of left side. Other glands soon enlarged in the same locality and became matted together into a large mass. Synchronously with this occurred an enlargement of the glands in the axillæ and groins. The spleen became much enlarged. Leukemia was well marked. An examination of the blood by Dr. Bergtold, December 15, 1897, showed 4,310,700 red corpuscles, 14,000 white and hemoglobin 64 per cent. Patient had lost 20 pounds from his normal weight of 135 pounds. A daily rise of temperature was present, ranging from 99.8° to 103° F. General weakness was a prominent symptom. A tuberculin test was made but proved negative. The glands were rapidly increasing in size. Under the treatment of Dr. Bonney the patient began to gain weight and strength. His temperature became normal. The spleen and all the enlarged glands decreased in size. By spring of 1898 he had gained in weight up to 139 pounds. In the fall of 1898 there was a recurrence of many of the original symptoms—loss of weight, rise in temperature, general weakness and exhaustion—so that in the spring of 1899 he was confined to his bed for nine or ten weeks. Another blood examination was made at this time with practically the same results as stated above. Improvement took place again during the summer but in the fall there was a recurrence of the old symptoms. Patient was in bed for 10 weeks in the spring of 1900, with a daily rise in temperature; began to gain in the summer and had no recurrence of the trouble until July, 1901, when he began to lose weight, temperature ranged from 99° to 101° F., and this condition continued until May, 1902, when his weight had dropped from 132 to 111 pounds. During this time the glands in the upper part of the left side of neck became enlarged and when he consulted me, June 19, the posterior triangle of the left side of neck was filled with a mass of glands matted together, extending from the mastoid process to the clavicle, and there was a prominent mass in front of the sterno-mastoid, just beneath the angle of the jaw. His weight was 117 pounds. Glands in axillæ normal. Those in the groin could be felt but were not much enlarged. Spleen about normal in size. Skin on the lower border of neck, as well as of the entire chest, back and abdomen were bronzed, the abdomen being particularly dark. X-ray treatment commenced June 19, and from that time to the present patient has had 60 exposures. The first change noticeable in the glands was a breaking up of the masses so that the separate glands could be felt. This condition was manifest about the middle of July and has become more pronounced since, until at present it is possible to map out nearly every separate gland.

The measurements of the neck, which were taken by Dr. Bergtold, are as follows:

	Below Jaw. Inches.	At Cricoid. Inches.	Clavicle. Inches.
July 9	13¾	13	15¼
Aug. 11	13	12¾	14¼
Sept. 25	12¼	12½	13½
Oct. 6	12½	12½	13

This shows a diminution of the circumference of the neck:

below jaw of......1¼ inches.
at cricoid of..... ½ inch.
at clavicle of......2¼ inches.

The case is still under treatment.

Case XIV.—Mr. B., aged sixty-four years. Referred by Dr. W. A. Pusey of Chicago and Dr. J. M. Foster of Denver. Epithelioma involving the area over the left zygoma and inner aspect of the tragus of left ear. Area ulcerated and covered with crusts. Twenty-five centimeters above and outside the external angular process of the orbit is a scar area of the size of a quarter surrounded by small hard nodules. Patient first noticed trouble in 1896, and since then has been treated by competent physicians in this city and elsewhere, but the affected area has never been entirely healed. Eighteen exposures were given by Dr. Pusey, who referred him to me May 29 for a continuation of the X-ray treatment. I gave nine exposures to the ulcerated surface, and by June 11 this area was smooth and completely healed. The nodular area received 31 exposures covering the time to July 15. At this date the nodules had entirely disappeared and the surface has since remained perfectly smooth. August 1 two suspicious spots, covered with a crust appeared over the zygoma and one on the tragus of the ear. As these spots did not show a tendency to heal spontaneously, this area was exposed to the rays a second time. Sixteen exposures were given up to September 2. Shortly after this date this area healed completely and remains so at present.

This closes the series of cases that I purposed to describe to you this evening. It includes six cases of epithelioma, one of carcinoma, three of lupus erythematosus, one of chronic eczema, one of tubercular glands, one of tuberculosis pulmonalis and one of Hodgkin's disease. From the report it is manifest that the especial province of X-ray therapy is in the treatment of diseases that have annoyed and baffled the practitioner from time immemorial. One estimable feature of X-ray therapy is that no pain is caused by it, and the patient arises from the application unaware for the time that any action has been wrought.

The X-ray is not a panacea, but let us hope that its power for good as a remedial agent has only begun to reveal itself.

SUBPHRENIC ABSCESS AS A COMPLICATION OF APPENDICITIS.*

BY

HENRY A. CHRISTIAN, A.M., M.D., OF BOSTON,

AND

LOUIS C. LEHR, M.D., OF BALTIMORE.

In a study of 4,028 autopsies collected from the following sources,

The Boston City Hospital, Boston, Mass., Jan. 1, 1896, to Aug. 14, 1902 . .	1,890
The Johns Hopkins Hospital, Baltimore, Md., May 28, 1889, to Aug. 13, 1902 .	1,978
The Rhode Island Hospital, Providence, R. I., July 1, 1900, to July 1, 1902 . .	160
	4,028

death was found to be due directly or indirectly to acute appendicitis in 86. Of these 86 cases, 7, or 8.13 per cent. showed an involvement of the subphrenic region in a purulent process, and though in a strict sense of the word not each one of these was a case of subphrenic abscess, yet a review of them may be of use in illustrating the manner of formation and comparative frequence of subphrenic abscess secondary to appendicitis.

Since the classical publication of v. Leyden (Ueber Pyopneumothorax subphrenicus, Zeitschr. für klin. Med., I, 1880, 320), much interest has been attached to the subject of subphrenic abscesses in their various forms. They may occur in either subphrenic space. If in the right, they will be bounded above by the diaphragm, below by the liver, to the left by the suspensory ligament of the liver (Ligamentum suspensorium hepatis) and elsewhere by the abdominal parietes. If they occupy the left subphrenic space, to these boundaries will be added below, the stomach and spleen, but this space is not so sharply circumscribed as the right. Between the two, the suspensory ligament of the liver forms a barrier, which prevents, as a rule, the abscess from being bilateral. However, the ligament may be eroded and the process extend from one side to the other. Very exceptionally the process has extended from one side to the other behind the liver in front of the vertebral column, or abscesses have originated simultaneously on the two sides, so that the entire subphrenic space is occupied by purulent material, but separated into two portions by the intact suspensory ligament.

The origin of these abscesses is very various. Those on the right side more commonly arise by direct extension of an inflammatory process from the liver, from appendicular and periappendicular lesions, from perforation of the duodenum, and more rarely of the stomach; on the left side perforation of the stomach is the most frequent cause. Of the total number of cases, the cause, according to Nothnagel (Spec. Path. u. Therapie, Wien, 1898, XVII, 718), lies perhaps most often in a round ulcer of the stomach. Other etiological factors are inflammatory conditions of the kidneys, gall bladder and ducts, echinococcus of the liver and extension of an inflammatory process from the thoracic wall or contents. These abscesses may contain only purulent material (abscess subphrenicus) or purulent material mixed with gas (pyopneumothorax subphrenicus of v. Leyden). The gas comes either from perforation of some air containing viscus, or is produced *in situ* by the bacterial flora present, either the *Bacillus aerogenes capsulatus* (Welch) or some one of the *Bacillus coli communis* group. This last form may occur as a complication of appendicitis, as in a case reported by Umber (Pyopneumothorax subphrenicus (Leyden) auf perityphlitischer Basis ohne Perforation, Mittheil. a. d. Grenzgeb. d. Med. u. Chir., VI, 1900, 605). These two forms are often separated, since the latter presents a very distinct clinical picture, but etiologically and anatomically they are the same.

Subphrenic abscess is not a very common disease. Maydl in his monograph (Ueber subphrenische Abscesse, Wien, 1894) collected 179 cases. Lang (Ueber subphrenische Abscesse, Diss., Moscow, ref. Jahresbericht der gesammt. Med. II, 1895, 353) collected 173, and added three new cases. Yet, judging from its frequency following appendicitis, subphrenic abscess is a much more common affection than the above figures seem to indicate. Furthermore, during the past two years, among 410 autopsies at the Boston City Hospital, there have been six cases of subphrenic abscess, exclusive of those following appendicitis. Of these, three were right-sided and three were left. The former followed a perforated gastric ulcer, acute suppurative cholecystitis, and typhoid respectively; the latter pyothorax, cholelithiasis with suppurative cholangitis but no liver abscess, and acute hemorrhagic pancreatitis. In two of the cases the diaphragm showed gross perforation.

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*Contributed to Vol. XIII of the Medical and Surgical Reports of the Boston City Hospital.

Of Maydl's 179 cases, 23 were secondary to appendicitis. Lang found 26 due to appendicitis among 176 cases of right-sided subphrenic disease. Sachs (Archiv f. klin. Chir., I, 16) reported 41 cases in which he included 25 of Madyl's cases, but two of these should have been excluded, because the primary source lay in a perforation of the cecum by a foreign body. Weber (Deutsch. Zeitsch. f. Chir., LIV, 1900, 423) reports nine cases from 600 cases of appendicitis operated on by Sonnenburg. Of these 600 cases 350 had a periappendicular abscess, so the nine cases of subphrenic abscess form 2½ per cent. of the abscess cases. To these, in a later paper, Weber (Deutsch. Zeitsch. f. Chir., LX, 1901, 127) has added five cases from Sonnenburg's clinic. Elsberg (Annals of Surgery, XXXIV, 1901, 729) has operated on two cases of subphrenic abscess among 91 cases of appendicular disease, and from medical literature has been able to collect 71 cases of subphrenic abscess complicating appendicitis, making, with his two, a total of 73 cases. In doing this he excluded a number of cases, because the reports were meager and incomplete. Since the date of his publication single cases have been reported by Blake (Annals of Surgery, XXXIV, 1901, 703), Gaston (Med. Record, LIX, 1901, 452), Robinson (Lancet, 1899, I, 209), Dale (Cincinnati Lancet-Clinic, XLVI, 1901, 451), Caley (Lancet, 1900, I, 378), and others.

With Weber's 2½ per cent. of 350 operated abscess cases, Elsberg's two cases in 91 consecutive appendicitis operations, and the frequency with which we have found at autopsy an inflammatory condition in the subphrenic region, the conclusion seems justified that subphrenic abscess is not a very unusual complication of appendicitis, but that these cases have not, as a rule, been reported.

As these seven cases present a number of differences and several points of interst, those parts of the autopsy protocols relating to the appendix and the peritoneal and pleural cavities will be given in some detail.

Case I.—B. C. H., 98.247. J. H., male, age twenty-six. Anatomical Diagnosis.—Scar of former appendix operation; acute fibrinous general peritonitis; chronic adhesive localized peritonitis; retrocecal perisplenic and subphrenic abscesses; right pyothorax; acute serofibrinous pleuritis, left side; complete atelectasis, right lung; partial atelectatis, left lung; acute bronchitis; acute purulent mediastinitis; volvulus of small intestine; thrombosis of vessels of liver.

In the right groin is a scar 4½ cm. in length running parallel to Poupart's ligament, which is dark bluish in color, and slightly depressed below the surrounding skin (operation six months ago for appendicitis).

Peritoneal Cavity.—On opening the abdomen the coils of the small intestines present, are very greatly distended, hyperemic, and covered with thin flakes of fibrin. The coils of intestine are united by easily broken fibrinous adhesions. In the region of the appendix and cecum are numerous firm fibrous adhesions, in the meshes of which the appendix, with obliterated lumen, is found. The diameter of the appendix is much decreased. Posterior to the cecum is found an abscess cavity, containing a considerable amount of thick, creamy pus. The spleen is walled off from the general cavity by firm adhesions, and lies in a mass of the same thick, creamy pus. This pus is very adherent to the capsule of the spleen, and is only scraped off with some difficulty. The right lobe of the liver is bound to the diaphragm by recent adhesions. On separating these there is found to be a layer of the same thick, creamy pus lying between the liver and the diaphragm on the right side. Immediately over the left lobe of the liver there are fresh adhesions, but no pus. On examining the small intestine, 120 cm. above the ileocecal valve a complete twist of the intestine is found. All of the small intestine below this point and the large intestine is collapsed.

Pleural Cavities.—The right pleural cavity contains 1,800 c.c. of thick, creamy pus. The pleura is thickened and covered with soft yellowish fibrin flakes. The left pleural cavity contains 800 c.c. of a dark reddish fluid in which are numerous large flakes of fibrin. The fluid here is not purulent. The parietal pleura is partially adherent, showing the same appearance as the right, and in addition there are numerous small hemorrhages beneath it.

Lungs.—Right lung occupies a position close to the spinal column, is flattened, adherent by its apex to upper chest wall, slate-colored, and covered by numerous thick yellowish soft fibrin flakes. The lung is exceedingly heavy and flabby. On section it cuts with difficulty, is completely airless and can be readily moulded into almost any shape. Bronchi injected, and contain considerable muco-pus. Left lung shows the same condition of its pleura, and along the backs of the upper and middle lobe is the same condition as in the right lung, but the inner and anterior portions of the lung still contain air, are rather soft, pinkish yellow in color, and cushiony. Bronchial glands are enlarged and pigmented.

Diaphragm.—Both sides covered with an exudate of fibrin. No perforation present.

Cultures.—Heart's blood—*Streptococcus pyogenes.* Spleen—*Streptococcus pyogenes, Micrococcus lanceolatus,* and *Bacillus coli com-*

munis. Kidney—Sterile. Right pleural cavity —*Streptococcus pyogenes, Micrococcus lanceolatus.* Subphrenic abscess—*Streptococcus pyogenes* in almost pure culture.

Case II.—B. C. H., 00.115. E. A., female, age thirty-three. Anatomical Diagnosis.—Periappendicular, pelvic, and subphrenic abscesses; chronic localized adhesive peritonitis; acute fibrino-purulent pleuritis, right side; atelectasis, right lung; operation wounds.

In the right iliac region there is a healed scar 7 cm. long. In this same region, external to above scar, there is an incision 7 cm. long which enters the peritoneal cavity at the right side of the cecum, and through it a gauze drain passes into the region of the appendix.

Peritoneal Cavity.—The surface of the general peritoneum is smooth, glistening and dry. The region of the appendix and the end of the cecum are surrounded by slight adhesions and bloody diffluent material. The point of origin of the appendix is difficult to find, and its stump is apparently perfectly healed. The pelvis is walled off by rather strong adhesions involving omentum, small intestine, sigmoid flexure and apex of the bladder. On separating these the pelvis is found to be filled with dirty pus-like material. No direct connection between this and the condition about the appendix was to be made out. Between the diaphragm and the right lobe of the liver there is a small amount of dirty pus-like material. This communicates with the exterior by means of a wound passing through the base of the right pleural cavity.

Pleural Cavities.—The left pleural cavity is normal. The anterior part of the right pleural cavity is also normal. The lateral and posterior parts of the right cavity from base to apex and the right half of the base are walled off by rather firm fibrinous adhesions, and filled with 700 c.c. of fibrino-purulent exudate. The pleural walls are here covered by thick layers of fibrin. This cavity communicates with the exterior by above-mentioned incision.

Lungs.—Left lung pink, downy and appears normal. Right lung in the posterior and apical portions is normal. In the other portions it is covered with fibrinous exudate. Its tissue is soft and spleen-like in appearance. A bit of this sinks in water.

Cultures.—Heart, Spleen, Liver, Kidneys, Lungs, Pleuræ and Peritoneum—*Bacillus coli communis.*

Case III.—B. C. H., 01.110. H. B., male, age thirty-five. Anatomical Diagnosis.—Operation wounds; appendectomy; acute fibrinous general peritonitis; mesenteric and portal pyophlebitis; multiple abscesses of liver; acute splenic tumor present.

Skin generally has a slight icteric tint and conjunctivæ are distinctly yellow. In the median line is an incision through the abdominal wall 8 cm. in length, beginning 1 cm. above the umbilicus and extending to within 3 cm. of xyphoid cartilage. In the right lower quadrant of the abdomen is an "appendix" incision 4 cm. in length. Both wounds are closed by sutures.

Peritoneal Cavity.—Peritoneal surface is lusterless. All the coils of bowel are slightly adherent by easily broken fibrinous shreds. In the cavity of the pelvis is a small amount of serosanguinous fluid. In the region of the appendix, the appendix stump is found, and on pressure nothing escapes from the lumen of the cecum. Between the spleen, stomach, left side of diaphragm, liver and posterior wall of peritoneal cavity is an abscess containing offensive, yellowish, semi-fluid, purulent material. Its wall is everywhere covered by a fibrinous membrane, about 1 cm. in thickness, which is readily detached. Smears from pus in the subphrenic abscess show flattened streptococci. Mesenteric lymph nodes all somewhat enlarged.

Pleural Cavity.—Left pleural cavity is normal. Right pleural cavity is obliterated by old fibrous adhesions throughout. No fluid.

Lungs.—Left lung normal in color and consistence. Surface of the right lung is beset with fibrous shreds. On section it is normal.

Cultures.—Heart's Blood.—*Streptococcus pyogenes,* one culture; *Bacillus coli communis,* three cultures; sterile, one culture. Liver.—*Streptococcus pyogenes,* and *Bacillus coli communis,* two cultures. Spleen.—*Bacillus proteus,* one culture. Kidney.—*Bacillus coli communis,* one culture. Peritoneum beneath omentum.—Sterile, one culture. Blood from vessel near portal vein.—*Streptococcus pyogenes,* one culture; *Bacillus coli communis,* one culture. Cultures made from heart and blood vessels by aspirating with syringe and adding blood to media.

Case IV.—B. C. H., 02.91. G. C., male, age thirty-three. Anatomical diagnosis. Operation wound; appendectomy; perityphlitis; volvulus of small intestine; acute serofibrinous peritonitis; subphrenic abscesses; chronic tuberculosis of lung and spleen; tuberculous ulcerations of ileum; chronic interstitial nephritis.

Midway between umbilicus and anterior superior iliac spine there is an operation wound running parallel with the rectus abdominis muscle.

Peritoneal Cavity.—There is about 200 c.c. of greenish yellow fluid in the subdiaphragmatic regions of both sides. Smears made from this show a variety of bacteria including the *Streptococcus pyogenes.* The coils of intestine are markedly meteoristic. The exudate in the lower abdomen is less fluid and more fibrinous than higher up, and glues together the coils of the intestine. The subdiaphragmatic surface of the liver shows fresh fibrin in smooth flakes, which can be easily peeled away. The right lower angle of the liver shows greenish fibrin and an exudate which appears to have affected the liver substance itself. Two to 3 cm. internal to the appendix incision, a portion of the wall of the cecum has become firmly adherent to the abdominal wall and presents a fibrous ragged surface on separation with considerable old hemorrhage. The appendix can not be found (at operation a gangrenous appendix already sloughed off had been removed). Its stump is buried in a blackish mass of tissue lining the inside of the deep pocket beneath the appendix incision.

Pleural Cavities.—Left normal. Right completely obliterated by old adhesions.

Lungs normal, except for a caseous nodule in middle lobe of right lung.

Case V.—R. I. H., 00.1. J. C., male, age fifty. Anatomical diagnosis. Operation wound; acute ulcerative appendicitis; periappendicular abscess; extension of abscess into retroperitoneal and perinephric tissues; perforation of ascending colon; acute localized peritonitis; edema of lungs.

There is an operation wound in the right groin, beginning 2 cm. to inner side of anterior superior spine of the right iliac bone, and extending upward and outward parallel to the crest of the ilium for a distance of 6 cm. Abdomen is distended.

Peritoneal Cavity.—Peritoneum is smooth, except about seat of operation. The mesenteric lymph nodes are not enlarged. No fluid in peritoneal cavity. Intestines are distended with gas. There are slight fibrinous adhesions of intestines to abdominal wall around operation wound. These adhesions are easily separated. The separation exposes two openings—one just external, the other internal, to the cecum, both extending into the retroperitoneal tissues. From them a yellowish semi-fluid fecal material escapes.

Appendix.—Only the base is visible. It arises from the posterior wall of the lower end of cecum, and extends inward along the brim of the pelvis, with the tip slightly curled upon itself. It is firmly bound down by old fibrous adhesions. It measures 12 cm. in length. The proximal 6 cm. appear perfectly normal. The distal 6 cm. is riddled by multiple perforations, from some of which escapes a yellowish fecal fluid. The abscess about these perforations is found to communicate with the retroperitoneal space, into which the above-mentioned openings about the cecum lead. In the posterior wall of the cecum is an almost spherical opening about 1½ cm. in diameter leading into the retroperitoneal tissues also. The retroperitoneal tissue here is softened and diffusely infiltrated with a brownish-gray puriform material. This extends upwards as a grayish-yellow exudate in places muco-purulent, elsewhere as masses of a tough, apparently fibrinous material. It invades the right psoas muscle, extends along the vena cava inferior, posterior to the duodenum as it crosses the spinal column, and infiltrates everywhere the perinephric tissues of the right side, extending even between the diaphragm and the liver.

Pleural Cavities.—Left is smooth; right is almost entirely obliterated by old fibrous adhesions. Lungs are deeply pigmented. Left is very voluminous, especially the lower lobe, but is soft and crepitant throughout. It is very dark red, and on section presents a smooth, moist glistening surface, from which much bloody fluid escapes on pressure. Right is not quite so voluminous as left, but otherwise not essentially different. Bronchial lymph nodes pigmented, but not enlarged.

Cultures.—Heart's blood—*Streptococcus pyogenes.* Peritoneum.—*Streptococcus pyogenes.* Perinephric tissue.—*Streptococcus pyogenes.* Bits of tissue from liver, lung, heart and kidney, placed in thermostat over night, all show large numbers of bacilli, with the morphology and staining properties of the *Bacillus aerogenes capsulatus.*

Case VI.—J. H. H., 1581. Female, age thirty-two. Anatomical diagnosis.—Operation wounds; acute gangrenous appendicitis; periappendicular pelvic abscess; subphrenic abscess; acute fibrinopurulent general peritonitis; acute splenic tumor; cloudy swelling of myocardium, kidneys and liver; edema and congestion of lungs; healed tubercular foci in lungs; acute sero-fibrinous pleuritis, both sides; chronic adhesive pleuritis, both sides.

Under the right edge of rectus abdominis muscle is a recent surgical incision 17 cm. in length with the middle third containing a gauze drain and the upper and lower thirds closed and healing per primam. In the right flank posterolaterally is a recent surgical incision 3 cm. in length, containing drains.

Peritoneal Cavity.—Upon opening the peritoneal cavity the intestines are found adherent to the anterior abdominal wall by firm fibrinous adhesions, which are found everywhere except in the region of the splenic flexure of the colon. Between the loops are numerous pockets of pus. Upon untwisting the coils of intestine, it is found that the appendix is gangrenous, and has sloughed off at its attachment to the cecum. The detached portion dips over the brim of the pelvis, and is contained in a large abscess containing about half a pint of thick grayish-yellow, foul-smelling pus. The abscess cavity occupies Douglas' cul-de-sac. The stump of the appendix is shut off by one of the gauze drains. The other gauze drain lies against the colon on its lateral side. A rubber drain leads into an abscess cavity between the liver, hepatic flexure and lateral abdominal wall. The liver has between its right lobe and the chest wall an extensive abscess which extends also over the lower surface of the diaphragm almost to the median line.

Pleural Cavities.—The right pleural cavity contains 100 c.c. of turbid fluid, containing flakes of fibrin. Left pleural cavity contains about 200 c.c.

Lungs.—Left lung roughened over lateral and posterior surfaces from old adhesions, studded with ecchymoses and moderately voluminous. The dependent portions not crepitant. At the apex of the lower lobe are several firm nodules, which on section are found to be caseous and calcifying. On section the lung is found to contain a great excess of watery, frothy fluid. The lung has a moderately uniform color, from a dark red in the lower lobe to a higher red in the upper lobe. There are one or two emphysematous areas in the lower lobe. Right lung.—Moderately voluminous. Pleural surfaces smooth, except for a few old adhesions at the base. At apex is a puckered scar containing a calcifying tubercle. The dependent portions of the lung are not crepitant. On section the lung contains an excess of a frothy, watery fluid, and presents the features seen in the left lung. The non-crepitant lower lobe sinks in water.

Case VII.—J. H. H., 1865. Male, age eleven. Anatomical diagnosis. Appendectomy; acute general fibrinous peritonitis; extensive multiple abscess formation in the peritoneum; subphrenic abscess; acute diphtheritic colitis; acute pleuritis, left side.

Peritoneal Cavity.—Upon opening the peritoneal cavity there are found delicate fibrinous adhesions everywhere between the abdominal organs and the anterior abdominal wall. There is a small abscess in the subcutaneous tissue communicating with the granulating surface of the wound by a channel at the lower end. The abdominal organs are very much bound together, and on attempting to separate them one ruptures the intestines. There are delicate adhesions between intestinal coils everywhere. Just under the diaphragm on the left side is a large abscess cavity located outside of the stomach, partially walled off by the liver. This contains greenish-yellow pus. This cavity is lined by a rough hyperemic granulation tissue which is thrown up into folds which are almost like the valvulæ of the intestines. Pressure on the abscess causes the pus to exude from another cavity in the ileo-cecal region, and a probe can be passed 30 cm. without meeting with resistance along the right abdominal wall. The channel can be traced with the scissors from the subphrenic abscess into the ileo-cecal region, where it turns toward the centre, giving rise to numerous channels which pass down between the intestinal coils. Another abscess filled with fluid is found just behind the transverse colon; this cavity is continued around over the aorta, where it underlies the ascending colon. The ileo-cecal valve is found to be practically in its normal position. In the walls of the abscess there are black silk sutures at the point where the cecum is against the abscess cavity; this is probably the seat of the appendix. On the left side midway down the course of the abscess cavity there is a fistulous communication with the ileum. The kidney lies quite free behind the abscess. The transverse colon at the splenic flexure crosses the abscess and lies behind it; the abscess is not therefore retroperitoneal. The channel follows almost exactly the course of the colon down to the region of the bladder, where it crosses over through the sinus, which opens on the abdominal surface. The abscess cavity on the right side extends up to the region of the liver, where it ends blindly. The pancreas is free and apparently normal. The main coils are inextricably embedded together, and there are numerous adhesions and abscesses between these coils. An attempt to separate them results in tearing the intestines. The abscesses lie very often between the adhesions of the mesentery and omental folds. Adhesions are more dense about the region of the ileo-cecal valve.

Lungs.—Left lung is somewhat collapsed in the lower lobe, where it is firmly adherent to the diaphragm.

Of these cases, five were male, two female. One was eleven years old, one twenty-six, four between thirty and thirty-five, and one fifty. In four of these cases the *Streptococcus pyogenes* was present in several organs, in one the *Bacillus coli communis,* and in two no cultures were taken. In five cases the appendix had been removed, leaving only a short stump; in one the cecum and the appendix with obliterated lumen were bound down by fibrous adhesions, and behind the cecum was an abscess; in one the appendix was bound down by adhesions, its distal half gangrenous and riddled with perforations.

In the above seven cases the affection was unilateral 6 times, 4 times on the right, two times on the left. In one case it was bilateral. Right-sided subphrenic abscess is much the more common following appendicitis. The cases of Lang, Weber, Elsberg, Blake and Umber were all right-sided. Strangely enough, Elsberg (*loc. cit.*) does not seem to consider the left subphrenic region in treating the subject, and in his table of collected cases the locus of the disease is not mentioned. If we consider the way in which the abscesses originate secondary to disease of the vermiform appendix it is evident that the right-sided form would be the most common, though the left can readily occur, the localization being somewhat influenced by the situation of the appendix.

Subphrenic abscess secondary to appendicitis mav occur in one of four ways: (1) As a localized abscess, a part of a general purulent peritonitis; (2) by extension of the diseased process from the appendix to the subphrenic region by an intraperitoneal route; (3) by extension of the diseased process by an extraperitoneal route, either by way of the lymphatics or by infiltration through the retroperitoneal tissues; (4) by way of the blood current as part of a general embolic septic process, or as a sequence of liver abscesses which are of embolic origin by way of the portal vein.

Originating in either the first or last ways, the abscess might equally well appear on either side; in the second, either side might be affected, but the right would be much more frequently, since the ascending colon forms a natural drain or gutter in this direction; in the third only rarely would the left side be involved, and then, as a rule, accompanying a misplaced diseased appendix.

It is by extension (2) and (3), that the greatest number of these cases originate. Whether the route in any given case will be intra- or extraperitoneal depends on the situation of the appendix and the periappendicular process. If the latter is retrocecal, and so extraperitoneal, the chances are that the process will take an extraperitoneal route and reach the subphrenic region by way of the loose areolar tissue in the lumbar region. When the abscess is retrocecal, it is claimed that there is greater liability to the formation of a subphrenic abscess.

Having reached the subphrenic region extraperitoneally, the abscess may remain so or it may then become intraperitoneal. If the former is the case it is likely to be small, since the peritoneum covering the diaphragm is very intimately adherent to the muscle substance (Hofmann, A. Schmidt, cited by Elsberg). The latter fact would also influence its early penetration into the space between the diaphragm and liver. Among the cases collected by Elsberg 27 per cent. were extraperitoneal, 48 per cent. intraperitoneal and 25 per cent. of doubtful anatomical location.

Our cases illustate quite well some of these points in the manner of origin of subphrenic abscesses. In Case I there is a retrocecal and a right-sided subphrenic abscess. Here it would seem that the latter originated by the extraperitoneal route, though the case is complicated by a volvulus of the small intestine, general fibrinous peritonitis, fibrinous adhesions between the left lobe of liver and the diaphragm and thrombosis of some of the veins in the liver. Case II also indicates an extraperitoneal route to the right subphrenic space; here the general peritoneal cavity is clear. In Case III pylephlebitis and multiple liver abscesses are present. The subphrenic abscess is on the left. Case IV shows bilateral, not completely walled-off subphrenic collections of pus, part of a general peritonitis. In Case V an infiltrating purulent process can be clearly traced from the appendix region up along the retroperitoneal tissues of the right lumbar region, until it makes its appearance between the diaphragm and liver. In Case VI the course of the process is not very clearly traced, though with a general peritonitis and numerous pus-pockets it may have arisen as part of the general peritonitis. Case VII shows an intraperitoneal route of extension from appendix to left subphrenic region. Among the seven cases, it may be claimed that all four ways of origin are illustrated.

In four of the seven cases the process had extended from the subphrenic region into the pleural cavity, though in none was the diaphragm perforated. In Case II the pleura had been incised by the surgeon for drainage. In the other three the pleural cavity on the side of the subphrenic abscess was entirely obliterated by fibrous adhesions.

In cases of appendicitis the pleura may become involved in an inflammatory process in two ways: (1) By extension from a pneumonic focus or infarct in the lung; and (2) by extension from the abdominal cavity, either by way of the lymphatics or by erosion of the diaphragm. This latter form constitutes the appendicular pleurisy of the French writers, is very often associated with subphrenic abscess as in four of our seven cases, and is almost always right-sided. That it is always right-sided, as claimed by Lapeyre (Revue de Chir., XXIII, 1901, 508 and 646) and others, cannot be agreed to; for, as we have seen, subphrenic abscess following appendicitis may occur on the left side, and be followed by acute pleuritis of that side. This did happen in Case VII.

In conclusion, we wish to express our thanks to the pathological departments of the Boston City, Johns Hopkins and Rhode Island Hospitals for access to their records and permission to report these cases.

A CONSIDERATION OF THE SCIENTIFIC APPLICATION OF MECHANICAL VIBRATORY STIMULATION IN THE TREATMENT OF DISEASE.

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WHETHER he would have it so or not, it is evident to the most casual observer of the trend of medical events, that a new era in therapeutics has been inaugurated and entered upon.

For years, our profession was reproached with the taunt from the lips of the critical if not unfriendly laity, that while surgery had made rapid and brilliant strides, therapeutics had stood still. It was measurably true. The era of slavish dependence upon drugs is rapidly giving place to advanced therapeutic methods in the treatment of a large and increasing number of diseases of the human body.

Electricity, which has for years been knocking at our doors for therapeutic recognition and with only indifferent success, has, within the past two years, received the most cordial and enthusiastic consideration from the profession. Doors hitherto closed to it are now being rapidly opened and an earnest invitation given to this new remedial agent to enter. Probably more electrical instruments have been sold to physicians within the past eighteen months than during the entire preceding ten years. Outside of the profession —and it should never have been permitted to go outside—psychic therapeutics, under various names, are coming into public favor. The profession generally is slowly coming to realize that there is something in this method of treatment and is utilizing it to a limited extent. But it has not progressed very far beyond hypnotism yet, which is only one of the elementary steps in this new therapy.

No matter whether we deplore it or rejoice because of it, the fact nevertheless remains that the propulsively progressive spirit of the age appears to be back of these movements and actually forcing what may be very properly called *advanced therapeutics* upon the attention of our profession. All these advanced methods of treatment unquestionably have their proper places. It will no doubt be found, after further investigation, that each is capable of filling a place peculiarly its own, and then much of the present rivalry for preference of method will quietly and quickly disappear.

The purpose of the present paper is to bring to the attention of the profession, in an orderly and necessarily somewhat explanatory way, the merits of the newest and one of the most valuable methods in advanced therapeutics.

Judging from the character of the inquiries propounded concerning it, it is fair to assume that treatment through mechanical stimulation and vibration is, both as to its theory and the practice of its application, less well understood to-day than electro-therapeutics was ten years ago. Few physicians, it is believed, fully comprehend the theory of its application or are cognizant of the startling beneficial results which frequently follow its proper application to *suitable* cases.

What, then, is meant by mechanical stimulation and vibration? Let us first state *what it is not!* It is not massage. There is a rather general belief that it is essentially, if not mainly, that. Nor is it similar to, or an improvement upon, the Swedish movements. It embraces the beneficial qualities that inhere in all these methods, but is not subject to their limitations of usefulness.

Mechanical stimulation and vibration are applied with reference to the accomplishment of one primary condition, viz.: *Stimulation of the nerve or nerve centers concerned in and controlling the diseased organ, which are found principally in the spinal and sympathetic systems.* This is attempted for the double purpose of (1) Stimulating and equalizing blood currents; and (2) stimulating secretion and excretion, and the lymphatics.

Briefly stated, this comprehends its scope and design in the treatment of diseases or diseased conditions of the body. It becomes at once apparent that its range of application is almost coextensive with the needs of the ailing physical organism, and is, in varying degree, applicable to almost every form of disease. While in no sense a "Cure All," it nevertheless has a wide range of application and will eventually find a place in the armamentarium of the specialist in the various branches of medicine as well as in that of the general practitioner.

The aim of all rational therapeutic methods, whether with or without drugs, is to modify or change abnormal conditions by stimulating into action that which shall tend to make other and normal ones. The intelligent use of any drug or remedial method is to reach and evoke in the patient the faculty of self help—the natural power of repair—just when and where it is most needed. The essential meaning of all therapeutics is to summon and concentrate this remedial force on the obstacle or obstruction to be overcome or removed. A stream of given dynamic ability is adequate to supply the organism in ordinary health; but morbid conditions must be overcome with a stream of greater intensity, directed to the seat of the obstruction. It is thus and only thus that we can assist nature to make a cure or to afford relief in disease.

Stimulation of the nerve or nerve centers connected with the diseased organ, was stated to be the primary factor in the treatment by mechanical vibration. What, then, is meant by "nerve stimulation," "toning the nerves," and like expressions that we have grown so accustomed to using? Simply that the nerves are urged and assisted to more effectually functionate and so fulfil their physiological mission within the physical organism. If we succeed in doing this, we are coöperating with and assisting nature to evolve a cure.

The nervous system is so constructed that it can be affected only by vibrations. It alone responds to vibrations. So long as it is able to receive and respond to them, the bodily organs remain healthy; otherwise they become abnormal and diseased. It is perhaps unnecessary to say that the natural and normal stimuli of the nervous organism inhere in or are a part of the universal ether (more elastic than any other form of matter) that fill the universe. It is the medium filling all space through which the vibrations of light, radiant heat and electric energy are propagated. In normal conditions, it acts *automatically* upon the nervous organism.

When, for any reason, a nerve fails sufficiently to respond to its natural stimuli, it becomes the duty of the physician to assist it by providing, temporarily, artificial stimuli. This, I believe, is more efficiently accomplished through the application of mechanical vibration than by any other method known to us at the present time. Landois and Stirling in their Text-Book of Human Physiology (page 676) say: "Nerves possess the property of being thrown into a state of excitement by stimuli. * * * Mechanical stimuli act upon the nerves when applied with sufficient rapidity to produce a change in the form of the nerve-particles."

Having seen what "stimulation" of the nerves really mean, the next inquiry naturally would be, "what of it?" what results from such stimulation? A good many changes are thus brought about, notably (because very important) increased blood supply to a part through the action of the vaso-dilator nerves, or diminished supply through the action of the vaso-constrictor nerves In the one case, local nutrition, secretion and excretion are improved, while in the other, local congestions or engorgements are relieved. The tendency of the automatic functions of the body—the reparative processes of nature—is to maintain equilibrium. This condition is maintained in health and interrupted in disease. Mechanical vibratory stimulation, when applied to the controlling nerve centers, powerfully assists in accomplishing this purpose. Blood pressure is raised or lowered by its application precisely as the parts or organs require it, in order to restore and maintain perfect equilibrium. We know that nerves possess an inhibitory as well as an accelerating quality, a conspicuous example of which is found in the pneumogastric with its numerous branches. The action of these functions is orderly and perfect so long as the nerve itself remains in normal function. But should irregularity of action occur, we seek to apply our remedy to the nerve in its entirety rather than to any of its component qualities of function. We know very well that nature can be trusted to attend to proper functionation if equilibrium is only maintained.

Elimination may be accelerated through stimution applied to the nerves controlling the lymphatic glands and the other larger excretory organs, of which the liver, kidneys and spleen are the most important. This is a highly important principle in this method of treatment.

Speaking broadly but still accurately, it is the *quality* and activity of the circulation that keeps the functions of the body in right or wrong condition, and *the nerves govern and control the circulation.*

Thus far in this discussion we are probably in substantial accord with the views of leading physiologists. Recurring now to the primary proposition submitted earlier in this paper, viz.: that mechanical vibratory stimulation accomplishes its most important work through stimulation of the nerves or nerve centers concerned in and controlling the diseased organ and *which are mainly located in the spinal column,* we may naturally anticipate dissent or skepticism. There are two reasons for this. First, we know, in a general way, that the osteopaths, so called, are much given to manipulating the spine, therefore, we shrink from anything savoring of their methods of procedure; second, we have not perhaps carefully studied our physiologies with reference to this point, especially those of more recent date, otherwise support would be found for the theory and practice of localization of controlling nerve centers given off at various points along the cord.

The first objection is puerile and should be dismissed with the brief statement that while we as a profession know and care very little about the theories and methods employed by the osteopaths, we cannot afford to reject, without investigation, any procedure likely to benefit our patients, simply because similar methods and measures may have been or are being employed by irregular practitioners. As physicians, it is alike our province and our duty to employ whatever is meritorious and beneficial in alleviating human suffering regardless of the source from which it emanates.

The second objection can be best met by referring those who care to pursue the subject, to page 578 of Foster's Text-Book of Physiology, under the heading of "Automatic Action of the Spinal Cord." Also to page 564, on "The Reflex Action of the Spinal Cord." Also to page 301, where "a nerve center situated in the lumbar spinal cord" is referred to as controlling the sphincter ani in the act of defecation. Landois and Stirling, on page 861 of their physiology, say "Splanchnic Area. By far the largest vasomotor area in the body is that which is controlled by the splanchnic nerves as they supply the blood-vessels of the abdomen; hence stimulation of their peripheral ends is followed by a rise of blood pressure." The increased pressure continues only until equilibrium is established, and the same stimulation in the event of stasis or engorgement, is in treatment by mechanical vibratory stimulation, quickly followed as a secondary effect, by lowered blood pressure.

Quotations similar to the above might be multiplied almost indefinitely, but attention is especially invited now to pages 837 to 867 of Landois and Stirling's Physiology, where it will be found that the contentions of this paper upon the point now under discussion, are fully sustained.

Reference is also invited to Kirke's Handbook of Physiology. On page 297 of this work is this statement: "The pulmonary vessels are supplied by nerves which have been discovered by stimulating certain nerve-roots in the upper thoracic region." Again, on page 299: "The vaso-constrictor nerves for the whole body leave the spinal cord by the anterior roots of the spinal nerves from the second thoracic to the second lumbar, both inclusive." Only a limited number of references can be here given, not because they do not plentifully exist, but rather that the limits of this paper will not permit of further amplification of this point. It may be said, however, that the contention that the various organs of the body are affected through the nerve connections given off from the spinal cord, is fully sustained by the best of the more recent writers on the subject of physiology.

Emphasis is placed on this branch of the subject because it is believed that upon the recognition of spinal nerve localization and the application of vibratory stimuli to these points, depends the success of treatment by mechanical vibration. This paper is not designed to give instruction in the technic of the method to be employed, but rather to point out the rationale of the treatment, with a brief statement of the writer's experience with it in certain chronic diseases.

Diagnosis cannot be dispensed with when using this method any more than in drug therapeutics. The theory of deficient or faulty nerve stimulus, either spinal or sympathetic (generally both), must be accepted and treatment applied in accordance therewith if the best results are to be hoped for and expected from this method.

The best technic is also important and must be learned precisely as dexterity in the use of other instruments is acquired. There is here as elsewhere a right and a wrong way of doing things. The application of vibratory stimulation is no exception to this rule, and there is a *best* way of doing that, too. We have no right to expect the best results except as our operative technic is the best.

Some Practical Results.—It would be quite impossible in a paper of reasonable length, to set out in detail the histories of all the cases treated within even so brief a period as one month. Inasmuch as a large number of cases have been treated daily at the clinics of the New York School of Physical Therapeutics during the last three months, only *general* references to them by groups and as to results, can at this time be made. At a later date, I shall hope to present a series of cases, with histories in detail.

A treatment which stimulates to greater activity the neural connections of the various visceræ of the body; that equalizes blood pressure; stimulates secretion and excretion and the glands conconcerned in elimination; that improves local and general nutrition and metabolism; that inhibits nerves and nerve-centers and so relieves pain, has indeed a wide range of application. Experience has abundantly demonstrated that this is true of the treatment we are now considering.

As already intimated, it is impracticable to do more at this time than to present a cursory view of the general range of diseases in which vibratory treatment has been attended with marked results, and by that is meant results more prompt and satisfactory than by other present recognized methods of treatment. In this list are to be mentioned the various forms of nervous disorders: neurasthenia, melancholia, insomnia, hysteria, and the like, in all of which beneficial effects were realized from the first treatments.

Ocular affections, dependent on anemia or hyperemia, have been uniformly benefited. Our success in affections of the ear, up to the present time, has been less satisfactory than with those of the eye. In exophthalmic as well as in non-exophthalmic goiter, the treatment has been highly successful and resulted in a decided and steady reduction in the enlarged thyroid gland. In scoliosis, quick results have followed the treatment in every instance, and without employing suspension, casts, braces, or other auxiliary methods. In the various congestive forms of pelvic diseases (exclusive of pus sacs), vibratory treatment has given results that may well inspire the hope that a brighter day is soon to dawn in the management of this large and troublesome class of cases.

Functional disorders of the digestive organs, inactivity of the liver, kidney, spleen and bowels have usually been much benefited from the first treatment, and most cases symptomatically cured after a few additional treatments.

Mechanical vibration has been found *uniformly* successful in the treatment of varicose conditions. Inflammation and pruritis are quickly controlled, and the healing of indolent ulcers of various kinds, rapidly occurs.

By stimulating the lymphatics and emunctories of the body, infection and its local products have rapidly disappeared. There is good ground for hoping that vibratory stimulation will be found beneficial, at least, if not curative, in the treatment of malignant growths. Why should we not reasonably expect it? This treatment fulfils the requirements which are believed to be essential to success in this therapeutic endeavor. It is true that no new material element is introduced into the organism by this treatment. But is that imperative to success? Is not nature, the supreme healer, able to successfully eliminate all morbific products, provided only that all obstructions to its operations are removed and the glandular system is preserved and maintained in normal functions? Changes of climate, occupation and habits, conceded to be very potent remedial agents in the cure of various diseases, do not introduce any new material element into the body. They only assist natural processes by placing the patient in position favorable to the removal of obstacles from the pathway toward cure.

Thus far only cases in the incipient or first stage of pulmonary tuberculosis have been treated. Every case thus far treated, however, has been markedly benefited without employing any other remedial agent whatsoever. One case in which there was depression below the right clavicle, marked dulness on percussion, with râles and considerable cough and expectoration, showed much improvement after the second treatment. At the end of a month's treatment, there was a decided gain in appetite, weight and strength with a disappearance of all subjective and objective signs except the clavicular depression and a very slight amount of cough. In all of these tuberculous cases, it was obvious that mechanical stimulation at the outset favorably affected nutrition. Whether or not increasing experience shall demonstrate the entire curability of many of these cases by this method of treatment, enough has already been determined to warrant the belief that all cases in the earlier stages at least, may be more quickly benefited by mechanical vibratory stimulation than by any other method of treatment now known to us.

Cases of subacute rheumatism thus far treated have all been benefited, and most of them cured. Our records show that not a single case of neuralgia, such as myalgia, sciatica, pleurodynia, etc., has failed of speedy and lasting cure under this treatment where it has been persisted in for a reasonable length of time.

Of course no single method of treatment will ever be able to cure every case of even *curable* disease; still less can it be expected to succeed in those cases that lie entirely outside of curative possibilities as they are recognized to-day. Too much must not, of course, be claimed for mechanical vibratory treatment. It is not a cure-all, as stated earlier in this paper. Nevertheless, experience warrants the belief that there is more danger at the present stage of development of this treatment, in our expecting too little rather than too much from it. It is, in my belief, one of the certainties in the therapeutics of the near future that mechanical vibratory stimulation, properly applied, is destined to bring within the classification of "curable diseases," many chronic and acute disorders that thus far have been regarded as hopeless or incurable.

A word of caution ought to be added in closing. Not everything that goes into the hopper is grist. There are already several devices or instruments manufactured for the purpose of supplying mechanical *vibration* to the body. While none of them can be said to be wholly devoid of merit, there has thus far been but one instrument produced that seems to me to fully meet the requirements of the physician who desires to use this force with anything approaching scientific precision. An instrument manufactured and sold by the Vibrator Instrument Co., of Chattanooga, Tenn., appears to meet every reasonable requirement of the therapy of mechanical vibratory stimulation. It is the only mechanical device in this line, up to the present time, that has recognized in its construction the correct principle that the length of the stroke and the rigidity of the instrument is of greater importance than the rapidity of the vibrations. By shortening or lengthening the stroke of the arm of the vibration attachment, the operator is enabled to apply to a given area or part, either vibratory stimulation (where moderate stimulation only is desired) or vibration alone (where profound depletory effect is desired). This is of commanding importance. Indeed, it will be found in practice to accurately measure the difference between success and failure in the treatment of very many cases.

In conclusion, it cannot be too strongly recommended that those who propose to test the merits of this new method of treatment, should use an instrument constructed upon correct or scientific principles and solely with reference to the therapeutic requirements of physicians. Obviously this is impossible with instruments in the construction of which no provision has been made for restricting or localizing the treatment to specific areas or parts of the body. The majority of vibration instruments thus far manufactured, are open to this serious objection. In order to secure satisfactory results, we must initiate and pursue a line of treatment that is scientifically adapted to the case in hand, and to successfully accomplish this, an instrument is required that admits of and facilities the localization of our vibratory treatment. This is of first importance and without it the highest success with this method of treatment cannot be attained.

TONSILLITIS CLASSIFIED AS AN INFECTIOUS DISEASE.

BY WALTER SANDS MILLS, M.D.,
OF NEW YORK CITY.

It is a well known clinical fact that all catarrhal diseases of the nose and throat are more or less contagious. Tonsillitis is no exception.

Despite this undoubted contagiousness of tonsillitis the Department of Health of New York City, in February, 1902, ruled that children suffering from tonsillitis should not be excluded from school and so notified its Medical School Inspectors. Personally, I believe tonsillitis in the school room to be more detrimental than parasitic skin diseases, which the Department of Health does exclude.*

For a number of years I have searched each new work on practice expecting to find tonsillitis classified where I believe it to belong, with the infectious diseases. Bartholow, Anders, Strümpell and Osler put tonsillitis in the list of digestive diseases. Pepper's System of Medicine, Goodno, The Loomis-Thompson System of Medicine, and The Twentieth Century Practice, classify tonsillar diseases in a group by themselves. Allbutt's System of Medicine places tonsillar diseases with diseases of the pharynx. Anders, Goodno, Osler and other American authorities now place pneumonia, which is just as much a local disease of the lungs as tonsillitis is a local disease of the tonsils, in the list of infectious diseases. Allbutt's System of Medicine and the last American edition of Strümpell still put pneumonia in the list of respiratory diseases.

Acute articular rheumatism, which surely is less contagious than tonsillitis, is now classified by many of the American authorities as an infectious disease. These same authorities state that tonsillitis is more or less closely related to rheumatism, yet they refuse it a place in their lists of infectious diseases. Dysentery and typhoid fever are universally classified as infectious, but they are not nearly as liable to be transmitted as is tonsillitis.

An infectious disease is one that can be transmitted from person to person; one where in many cases we can get a definite history of exposure, followed by a period of incubation before the onset of symptoms in the new patient; or a disease one or more stages of which may be contagious and set up a similar train of symptoms in a previously well person.

The eruptive fevers, like measles, scarlet fever or smallpox are perhaps the best examples of infectious diseases and most completely fulfil the above requirements. Tonsillitis I have found to run almost as definite a course as any of these. To say that all cases of tonsillitis cannot be traced to preceding ones is simply begging the question. Every case of smallpox or measles or any other recognized infectious disease cannot be traced to its source, but enough of them have been so traced to make us isolate a new case as soon as we diagnose it. And so with tonsillitis: every practitioner of any experience with it must have met with successive cases in households that led him to believe it to be contagious.

My reason for classifying tonsillitis as an infectious disease is based solely on its clinical history. There is no known specific bacillus for tonsillitis, neither is there for measles, or scarlet fever, or smallpox. Staphylococci and streptococci have been found in tonsillitis, and occasionally, according to Simon, pneumococci.

The contagiousness of tonsillitis is well shown by the following series of cases:

December 4, 1897, I was called to a household to attend the waitress who was ill with tonsillitis. On inquiry I learned that a child in the family, aged twelve years, had been ill during a part of November with what the attending physician had called "grippe, complicated by sore throat." It had probably been a case of tonsillitis. The waitress had carried meals to the sick room while the daughter of the house was ill. On the fifth I found the governess, who had acted as nurse for the child, down with tonsillitis. On the sixth the two-year-old brother and the cook were both ill with tonsillitis. Two of the above were cases of simple catarrhal tonsillitis, two developed into the follicular variety. Each of the four probably had become infected about the same time. On the twenty-second of December the coachman was taken ill with tonsillitis. This was 18 days after the disease had appeared in the kitchen, or 16 days after the cook became ill. The coachman slept in the stable but got his meals in the house. He was sent to the New York hospital for treatment and my diagnosis was confirmed.

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* The Department of Health has been much more particular since the schools opened for the fall of 1902 and now excludes catarrhal disease.

January 26, 1898, I was called to see a man ill with tonsillitis. He had been exposed a week before while visiting a friend suffering from the same disease. My patient was promptly isolated, the only other member of the household coming in contact with him being a niece who carried him his meals. On February 23 she became ill with tonsillitis.

In March, 1901, I attended a fourteen-year-old girl down with tonsillitis. She had been visiting out of town the week before, but her visit had been cut short because her little hostess had become ill with the disease.

In January, 1902, I attended a girl of ten ill with tonsillitis. She had been playing at the house of a friend ill with quinsy.

In March, 1902, a physician who had been attending several cases of tonsillitis developed the disease himself. In due season his wife and two children came down with it.

Other series of cases might be quoted, but these are sufficient to emphasize the contagious nature of the disease. If the history of each case of tonsillitis was carefully gone into I believe a large majority of them could be traced directly to exposure to some preceding case. I have been able to so trace more than half of my cases. My experience is not unique. Osler, Anders, Strümpell and others speak of the contagiousness of tonsillitis. A recent paper in the *Medical Record* (March 1), by Dr. R. C. Brown, of Milwaukee, on "Follicular Tonsillitis," insists on its contagiousness and cites cases to support the contention.

One attack of tonsillitis predisposes to another. This is also true of some of the other infections. It may be that such cases are not absolutely cured, that the disease is latent but still present, and only awaits some exciting cause to start the cycle of acute symptoms up anew. Exposure to cold and dampness, or exposure to noxious gases may act as exciting causes of tonsillitis. Excessive venery is said to act as an exciting cause, supposedly by reflex action. It may act so sometimes, but why is it not more probable that a large proportion of such cases are really due to carelessness in getting overheated and then chilled, or to osculatory contagion?

Tonsillitis is often found associated with many of the other infectious diseases, especially with influenza, scarlet fever, measles, acute articular rheumatism and diphtheria.

In considering these various etiological factors of tonsillitis it must not be forgotten that they in no wise militate against its being contagious. Unless seed is sown in proper soil no crop will result; and in all infectious diseases it is necessary to have not only the contagious element, but also a tissue prepared to receive and nourish it. The various exciting causes mentioned impair the tonsillar tissue, and so serve to make ready the soil for planting the disease element.

In my recorded cases of tonsillitis, where I have been able to obtain a history of exposure, I find that the disease presents a definite period of incubation varying from one to four weeks. The majority of cases appear within 14 days. One case developed four weeks after the first exposure; but as this patient was in attendance on another case for an entire week, infection may have taken place at any time during that period.

Sex has no influence over the disease, my cases were equally divided between the sexes. Tonsillitis is said to be most frequent between the ages of fifteen and thirty. Nearly all of my cases were between ten and thirty, a number occurring between ten and fifteen. My youngest patient was eighteen months old, and I have had three older than thirty-five years.

Osler calls tonsillitis a local disease with severe constitutional symptoms. Why not call it an acute infectious disease with local manifestations? The onset is similar to that of other of the infections.

There is a period of general malaise lasting from a few hours to a day or two. The patient usually feels hot and cold by turns, or both at once. He may feel insufferably hot, yet every time he moves he gets the shivers. At other times there is a pronounced chill at the beginning. The temperature runs up to 102° F. or more, sometimes reaching 105° F. Pain and tenderness of the throat, externally and internally, are early symptoms. The patient complains of headache, backache, and a general tired or aching feeling all over. The face is flushed and the eyes congested. All of these symptoms develop rapidly, and the patient feels prostrated out of all proportion to the local manifestations.

Examination of the mouth shows a coated tongue. It may be very dry, or there may be an exessive secretion of mucus. One or both tonsils will be very red and more or less swollen. This redness may extend to the soft palate and uvula; later the parts may become bluish. Frequently a yellowish exudate shows itself on the tonsils. If the inflammation extends to the lining of the tonsillar follicles the disease is known as follicular tonsillitis; if it goes still deeper, into the parenchyma of the gland and causes suppuration, it becomes quinsy. In other words, simple catarrhal tonsillitis, follicular tonsillitis, and quinsy are successive stages of the same disease. Fortunately proper treatment will control its advance and prevent the development of quinsy in many cases.

As proof that the various forms of tonsillitis are but different stages of the same disease I wish again to call attention to the first series of cases quoted above. Two of the first four were cases of simple catarrhal tonsillitis, two were cases of follicular tonsillitis. All four originated from the same preceding case, and developed the disease about the same time. The simple cases were arrested in a day or two, the others ran on for several days. Also, the child treated in January, 1902, originated from a case of quinsy.

As tonsillitis is undoubtedly contagious sometimes (all writers are agreed as to that), and as the majority of cases occur in children or young adults, the first thing to do on seeing a case is to isolate the patient. If a case is found in school the patient should be sent home at once.

The patient should be put to bed and placed on a liquid diet. In the way of local treatment I use nothing but a gargle of cheap claret wine. This can be used every two or three hours or oftener as the patient wishes. The tannic acid in the claret acts as an astringent and the throat of the tonsillitis patient usually feels much better after its use. I use a number of different drugs for tonsillitis, and I believe with benefit to my patients. I have never had a case of tonsillitis go on to suppuration (quinsy) although I have detailed records of fifty and have treated many others. I have seen a number of cases of quinsy that were just on the point of breaking down when they came to me for treatment. Moreover, I believe the tendency to recur has after a time been eradicated by the treatment which I shall outline.

Aconite in small doses frequently repeated, at the very onset of the disease, is often of service in simple tonsillitis. When the disease has progressed to the follicular stage aconite is no longer useful. By small doses frequently repeated I mean drop doses of a 10 per cent. solution every hour, given preferably in water. Osler recommends full doses of aconite, but in my experience the smaller doses are more satisfactory.

If the fever is very high, pulse full and bounding, face flushed, eyes red, and evidences of intense congestion of the throat are present, a one per cent. solution of belladonna is the best remedy. Bartholow gives good indications for this remedy in his "Materia Medica." He fails, however, to mention it in the list of remedies for tonsillitis in his "Practice."

In follicular tonsillitis the remedy *par excellence* is phytolacca. I use drop doses of a one per cent. solution every one or two hours, according to the severity of the case. Its action is almost specific. As noted above, I have never had a case go on to suppuration. Bartholow speaks of phytolacca as a glandular remedy, especially as a specific in gathered breasts to prevent suppuration. I am able to endorse that most emphatically, and I can speak just as highly of it in follicular tonsillitis.

If suppuration has already begun when the case applies for treatment, nothing will clear it up so quickly as sulphide of calcium in $^1/_{100}$ grain doses.

For the routine giving of a cathartic at the onset of tonsillitis I never could see a reason. Quinine and the salicylates are of no special value, at least not in my experience. The use of antipyretics with the above treatment is unnecessary.

My object in writing this paper was simply to call attention to the contagious nature of tonsillitis, and to make a plea for what I consider its proper classification as an acute infectious disease. But when I came to read up the recognized authorities on their treatments I could not forbear outlining methods which appeal to me as more simple and more effective than those usually recommended.

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SPECIAL ARTICLE.

THE MEDICAL INSPECTION OF SCHOOLS: A PROBLEM IN PREVENTIVE MEDICINE.*

BY LEWIS S. SOMERS, M.D.,
OF PHILADELPHIA.

(Continued from Page 105.)

I have endeavored in part to point out some of the ways in which infection is transmitted in the schools, but only such as seem to be directly concerned with the work of the medical inspector. There are however numerous other means by which various diseases are transmitted from child to child, such as the placing of wraps in close contact or on the floor as is frequent, the common use of books, pencils etc. but while the inspector may enhance his value by detecting such mistakes, yet this applies more closely to other aspects of school hygiene which it is not desired to detail here, although they all bear a close relationship one with the other.

Exceedingly favorable results have been obtained in detecting infectious disease in the homes of school children and thereby preventing its entrance into the school, by having the teacher report to the inspector all children who have been absent from school for four or more consecutive days, or children who have been absent on account of illness, but who are unable to state the nature of the illness on their return to school. In the first class, the inspector on receiving the report of absence ascertains at the home of the child the nature of the illness and if it is contagious enforces the usual rules in regard to quarantine, or in states where compulsory educational laws are in force, the truant officer visits the home to determine the cause of absence from school and in case of illness reports the facts, when the school inspector proceeds as mentioned. Evidence has accumulated to show that this has been of considerable value in eliminating such diseases and in nearly every place where such measures have been enforced, epidemics have been prevented from gaining a foothold. In the case of those returning to school after illness, the problem is a little more difficult as many children return after diphtheria with the Klebs-Löffler bacilli still on their mucous membranes; or after measles while still capable of communicating it to others and after scarlet fever before desquamation has ceased. Where quarantine laws are rigidly enforced such dangers are reduced to a minimum, but still a small number of children return before all danger has passed, while where such laws are lax especially in rural districts, the dangers of propagating the diseases mentioned are correspondingly enhanced. Where the medical inspector acts as an agent of the health board it becomes his duty to examine the child, or certify to a negative culture if possible in cases of diphtheria and until he has certified that all danger of infecting others has ceased to exist, the child should not be allowed to return to school; while the children who have returned after unknown illness should not be allowed to enter the class room until it has been definitely ascertained that they or any one in their family have not suffered from a communicable disease, or in case such is found to have existed, the proper precautions should be enforced until the inspector has decided that it is perfectly safe. Almost daily the inspector will be confronted with cases in which he may suspect the beginning development of an infectious disease, but in which the symptoms are not sufficiently pronounced to enable him to make a diagnosis, tonsilitis especially is apt to produce considerable confusion in this respect, but definite measures should be taken and the child should be debarred from school until the diagnosis either made by the family physician or preferably by culture, indicates the harmless nature of the throat trouble. Too great care cannot be exercised in this respect and it is better to err on the side of safety and temporarily exclude a single pupil, than to expose the entire class to what may be the beginning of an attack of diphtheria.

Practically of the contagious diseases diphtheria is the most serious one frequently encountered and is responsible for many deaths among children of school age. During the census year 1900, there were 16,475 deaths from this disease alone the great majority being children of school age, while the number of cases it is impossible to determine, although thev were undoubtedly over 100,000. No disease is more dreaded in the home and in the school than diphtheria, yet it lies in the power of those in authority to greatly diminish the mortality rate and also to decrease the number of cases by adding in addition to other sanitary measures commonly in force, the medical inspection of schools, so that incipient cases will be detected and early treatment especially the administration of antitoxine will greatly reduce the mortality at the same time also diminishing the tendency to the infection of others. That diphtheria in recognizable stages is comparatively common in the schools can readily be shown by the cases found there. During four months in Chicago, 1,417 cases of diphtheria were located and as the result of this work, the statistics of diphtheria for the year preceding medical inspection and the first year of its operation suggest an important lesson. During 1899 the year preceding medical inspection there were 3,931 cases of diphtheria with 843 deaths, while for the first year of inspection there were but 3,303 cases and 797 deaths, a decrease in cases of 628 with 46 fewer deaths. From January to May 1900, 170 cases of this disease were found in the schools of Chicago, while for the year ending June 30, 1901, 193 cases were found, surely enough to indicate to any thinking mind that this is a serious problem in preventive medicine. Murphy in his recent report found that the prevalence of diphtheria was increased by school attendance and he found that it was the experience of nearly every health officer that the relation between school holidays and a fall in the amount of diphtheria was particularly striking. In four months in Newark 13 cases of diphtheria were found, while in Chicago 747 cases of this disease in school led to the discovery of 26 cases in homes; not receiving medical attention and that were not recognized. That medical inspection is retarding the spread of diphtheria is recognized by the Massachusetts State Board of Health who state that the prevalence of the disease in epidemic form made it possible for the board to introduce three new forces for its suppression namely, antitoxin, the use of the bacteriological laboratory and the third and probably most potent agent is the daily medical inspection of the schools. In Boston for 14 months ending December 31, 1895, 77 cases of diphtheria were found sitting in their seats at school, while in one week in New York 13 cases were found, another week four cases, while from a study of diphtheria in its relation to school attendance in London and Continental cities, Smith found that there was a strong presumption that school attendance is the main factor in the spread of the disease.

While scarlet fever is not near as frequent as diphtheria, yet in the last census year it was the cause of 6,333 deaths, while in those who recover it is the most frequent cause of suppurative otitis and its sequelæ may be seen wherever any considerable group of childeren are gathered together. While in comparison with other affections its numbers in the school seem small, yet on account of its extreme virulency each case exists as a serious focus of contagion and represents the basis of a formidable epidemic. Yet such cases have been found in school, 306 were discovered in Chicago, while a comparison of the number of cases for the years preceding and following inspection showed a decrease of 2,325 cases with 307 fewer deaths following the first year of inspection. The danger from this disease in the schools is dependent to a great extent upon those pupils who have returned before desquamation has been completed. Such cases however should be detected by the inspector and immediately returned to quarantine; no case of scarlet fever under any circumstances being allowed to return until desquamation has entirely ceased. From January to May 1901, the inspectors found 401 cases in the schools, while in other cities it appears to be found in much smaller numbers, 12 cases only being found in nine months in Philadelphia; four cases in four months in Newark, while in Boston for 1900 there were but 23 cases discovered in this way. An instructive lesson in regard to this disease is related by Keen in which 231 cases of scarlet fever were discovered not by the family physician, nor by the parents of the children, but by the medical inspectors and what is especially striking, the detection of these 231 cases at school led to the discovery of 745 cases at home.

Measles, chicken-pox and whooping cough are all considered by the laity to be of little moment and as a result it is of daily occurrence to find children with these diseases regularly attending school. This is especially so in measles and chicken-pox where the eruption is slight and not detected on casual examination, while in whooping cough where the spasmodic outbursts are infrequent, the child is kept at school until he has a paroxysm in the class room which usually leads to his detection. Many health boards do not officially recognize these diseases although measles and whooping cough are responsible annually for 12,866 and 9,958 deaths respectively, a greater mortality in each instance than from scarlet fever. These three affections undoubtedly form a large majority of the acute communicable diseases found in the school and the first two should receive sufficient respect from the authorities both health and educational, to prevent the annual outbreaks which are initiated a few weeks after the beginning of each term of school. That these diseases are prevalent and attend school daily, can readily be seen by the following figures. In Boston in 1895, there were found 28 cases of chicken-pox, 116 of measles and 33 of whooping cough, while for 1900, 121 cases of measles, 108 of chicken-pox and 62 of whooping cough were excluded by the inspectors. In New York City in two weeks, six cases of measles, four of whooping cough and 23 of chicken-pox were found, both measles and chicken-pox being recognized as contagious diseases by the Board of Health, quarantined accordingly and are not allowed to return until recovery has ensued and the premises have been disinfected. In Chicago in 1896, 46 cases of measles in the schools led to the discovery of an epidemic of this disease in several sections of the city, while for the school term of 1900-1901, there were found in attendance 434 cases of measles, 626 cases of chicken-pox and 195 individuals suffering from whooping cough. While in the same city from January to May 1900, the inspectors discovered 648 cases of measles, 55 of whooping cough and 670 of chicken-pox and in Philadelphia during one term, the inspectors found 152 cases of measles, 73 of chicken-pox and 20 of whooping cough. As regards these three diseases alone, medical inspection deserves respectful attention at the hands of sanitarians. As directly relating to this subject, the influence of measles upon school life has been studied by Schafer who found in four years in Schleswig-Holstein that the schools had to be closed 82 times on account of epidemics of measles and on several occasions they were closed on account of a lack of sufficient scholars to attend, nearly all being ill from the prevalence of this disease. While Armstrong the medical health officer of Newcastle-upon-Tyne closed all the schools for four weeks on account of the prevalence of measles and whooping cough and the epidemic was suppressed, while during a similar epidemic the following year, the experiment was tried of closing each school where scholars were taken ill only long enough to allow of disinfection and it was found that as far as measles was concerned, it was followed by its extinction. In one school in which there were 44 cases in three weeks preceding disinfection, after the first two weeks the number fell to three in 13 weeks.

So few cases of tuberculosis especially the pulmonary form have been found, that for practical purposes little attention need be given it here. When a case is discovered however I believe the inspector should advise that the affected child should not be allowed to remain in school and this for two reasons; first because healthy children should be protected from this disease and the second reason which seems to admit of little argument, is that for the best interest of the child it should be placed under conditions favorable for the cure of the disease if such are possible and therefore should not be allowed to remain in school where it must inevitably forfeit its life for a partial education which will necessarily be of no value to it.

As regards the contagious diseases previously mentioned and more especially diphtheria, medical inspection has proven of not only a direct but also an indirect value, by in many instances, shortening the period of quarantine placed upon the case and this has resulted from the early detection of the disease in school and thereby the material shortening of the course of the disease by prompt and early treatment, especially is this so since the introduction of antitoxin. Anything which will exercise a prophylactic influence regarding contagious diseases has not only a vital but also an economic value, for among the poorer classes quarantine usually means the difference between independence and pauperism and even the small scale in which medical inspection now exists, has done much to protect the school child from these communicable diseases and therefore has to many families meant independence at home and not a long period of want and privation. Further, inspection not only as regards contagious diseases but the entire class of affections found in school children, aids materially the chances of recovery by detecting acute diseases in their incipiency and therefore allowing of prompt treatment, at the same time removing the child from harmful influences. In contagious diseases it has caused in some places a better understanding among parents of the necessity for isolation and while this is essential in the suppression of this class of diseases is no doubt constantly being evaded, yet from the testimony of those connected with medical inspection in one way or another, numerous instances have occurred in which previously a contagious disease was not reported, but after the effects of this measure had been but partially demonstrated, the presence of another case of diphtheria for instance in the same family, was promptly reported. Isolation has also been aided by these means, as many of the cases are diagnosed in the school and therefore placed under the control of the health authorities as soon as the child reaches home, thus absolutely preventing the least pretense of evading quarantine measures.

As many of the states are adopting compulsory educational laws and therefore of necessity require truant officers, the employment of these officials as an aid in medical inspection has proven of added service especially in Chicago, where the medical inspection of schools is under the control of the Compulsory Educational Department. This is a new feature in inspection work but the truant officers have unexcelled facilities for detecting cases of contagious diseases in the homes of the school children and if this system is utilized, it will add greatly to the efficiency of the inspectors in detecting disease. The principal of the school reports to the truant officer all pupils who have been absent for four or more days and whose cause of absence is unknown and if on investigation the truant officer finds that there is illness in the house, a report is made to the principal of the school and the Board of Health, and in case the disease is found to be contagious, the children from the address where the disease existed are excluded from school until all danger has elapsed. That this work has been of added gain to medical inspection is shown by the detection of 2,706 cases of illness found by the truant officers during the school year of 1899-1900.

By removing many sources of contagion in communicable diseases and by detecting physical defects and various ills in the scholars, the interruption of school work through illness is reduced to a minimum. Of course it is impossible to estimate with any degree of accuracy the number of days of school attendance gained by the child as a result of medical inspection, but it must be considerable especially as the result of detecting defects of the special senses, where correction means days at school which had been lost in the past by headaches from eyestrain or frequent attacks of coryzia and acute inflammations of the upper air tract from the presence of enlarged tonsils, adenoids, etc.

An important aspect of medical inspection that has been much neglected is the examination in the lowest grades especially the kindergarten and allied classes, of the younger children. On account of the frequency of communicable diseases among children varying from five to ten years of age, especial care is necessary to prevent the infecting of many from one or more sources and while the so-called school diseases have not to any great extent developed at this time, yet the detection at an early age of eye or ear defects or abnormalties of the respiratory tract, is of paramount importance and in addition to a physical examination at least once each term, daily inspection for the purpose of preventing various diseases from getting a foothold is most imperative. This is demanded not only as a general preventive of disease as among the higher grades, but is markedly so on account of the methods employed in teaching and amusing these children, as they are brought into close contact one with another and in many ways the opportunities for development of contagious diseases are here greatly enhanced.

As has been stated by Wright, medical inspection, if properly performed, seems to offer the best chances for lessening sickness in school children, and this statement seems well borne out in the comparatively short time that inspection has been in existence in a few cities. As regards diseases of the eye, ear, skin, upper respiratory tract, etc., a marked decline in the number of cases found in the schools must be self evident, as the majority of these affections respond readily to treatment and of necessity their detection by the inspector with the recommendation that the child is in need of medical advice, seems to be heeded by many parents with the resultant removal of the defects. New cases are constantly developing however and these in addition to those not cared for and new pupils entering the different classes, constantly adds to the number to be investigated by the inspector. In Chicago the result of this care of the school children has been a notable decrease in the mortality of diphtheria and scarlet fever as shown by the first year's work, when there was a decrease in the number of diphtheria cases of 628 for the year, while scarlet fever showed a decrease of 2,325. The records of the Health Department of Chicago showing a material decrease in contagious diseases among children, since medical inspection of schools was established. The same results have also been noted in other cities, while in Philadelphia for the month of January 1900, 480 cases of sore throat were reported, yet under school inspection for the following seven months there were but 1,040 cases, showing an average monthly decrease of 330 cases. Such a decrease also being noted in Newark, where the decline in the number of cases examined as well as in the number excluded from month to month, shows the good results of careful medical inspection.

One of the earliest facts which drew the attention of investigators to the health of school children was the predominance of eye affections and as a result, probably more attention has been directed along these lines than to any other affections of the health, until very recent years. Ware as early as 1812 showed that the school-room was a frequent cause of myopia and undoubtedly from the early recognition of eye defects in school children, medical inspection had its inception and gradual evolution It is impossible here to more than outline what has been done for the eyes, what has been found and to consider the subject briefly in its relations to the medical inspection of schools. As regards the eye affections of school children, two broad classes may be differentiated for practical purposes, first, those diseases contagious or infections in nature of which purulent conjunctivitis is an example and which should be grouped with such diseases as erysipelas, ringworm, diseases of the scalp and scabies and in which the affected child should be excluded from school until cured, but differing from diphtheria, measles, etc., inasmuch as only the child affected is not permitted to attend school instead of this latter group of diseases, where all children in the same house are also excluded. These contagious eye affections are common in the schools and unless properly handled, give rise on frequent occasions to more or less disseminated epidemics. Their frequency may be judged from the fact that 55 cases were found in the Chicago schools during a period of four months; 113 cases were found in Boston in 1900; in 1890-91 an epidemic of follicular conjunctivitis in the schools of Dresden affected 10,000 children; 87 in New York in two weeks; 397 in Philadelphia in nine months and in Newark in four months 289 cases were found.

A more complex problem and one which has a great influence on the career of the pupil, is the various changes in the eye affecting the sight and accommodation. While tests sufficient to determine the presence or absence of a visual defect do not necessarily require the experience of an expert to properly perform them, yet they should be made by the physician to obtain the best results; as it is however this is usually performed by the teachers and even under these conditions the number of children with marked visual defects is somewhat enormous. In Philadelphia where this work has been in existence but a few months and therefore no statistics are available, the eyes are examined by means of suitable cards and a record is kept which will follow the child through its entire course at school. Similar methods are in force elsewhere and the results especially in Cleveland, have amply demonstrated the worth of the system. Previous to this in the former city, the medical inspectors found over 1,000 cases of defective vision, while the inspectors in Boston for 1900 found the following eye diseases in daily attendance at school: foreign bodies, 13; blepharitis, 23; stye, 14; ptosis, three; obstruction of lacrymal duct, four; diseases of conjunctiva, 113; interstitial keratitis, three; ulcer of cornea, 13; opacity of cornea, seven; iritis, three; stabismus, 12; nystagmus, three; imperfect sight without visible cause, 220; a total of 431 cases undetected at home, neglected and yet previous to inspection expected to be on a par with healthy pupils. Defects in sight are essentially the result of conditions at school, this of course does not imply that the sole cause of eye defects is the school, but many originate, others are increased and all may be rectified here. That school has a marked influence for harm upon the eye has been shown by the Swedish Commission, who found an increase in near sight from six in the lowest to 37.3 per cent. in the highest class and it was also found that this increase bore a direct relation to the length and amount of study. This is also shown by the researches of Cohen who in an examination of 10,000 children of all grades found one per cent. of myopia in country schools; 5.11 per cent. in elementary schools; 20.40 per cent. in grammar schools and 30.35 per cent in colleges. In 1896 Carter found among 8,125 children in the London schools, that only 39.15 per cent. presented normal vision. In the schools of this country the same results have been found and an abundant literature exists on this subject which it is unnecessary to quote here, but Calhoun found from the reports of examinations of 45,000 children, that near sight increases from nothing in the lowest to 60 and 70 per cent. in the highest classes. While in the Buffalo schools the percentage of visual defects increased at seven years of age from five, to 26 at 18 years and of the graduates of the high school 25 per cent. were near sighted. In the schools of Brooklyn the eye examinations showed that about one-third of the entire number examined were defective in this respect, varying in some districts to as high as 50 per cent., while in more favored localities was as low as 12 per cent. The deleterious effect of defective sight was also found in the fact that one-half of those deficient were above the average age of their grade, so that it is apparent that often the supposedly stupid pupils who make little or no headway in their studies are those incapacitated on account of defective vision.

Special attention has been given to the eyes in Cleveland and as a result of the examination of 32,939 pupils it was found that 6,169 or 18.7 per cent. had some defects. It is unnecessary to mention isolated instances of defective vision in its relation to school work, but many cases could be cited where the child made a failure in his studies until someone in school discovered that he could not see them when proper treatment had been applied, he would keep well up in the class and even outstrip the others previously considered his superior. This condition has been to a great extent remedied in a few cities, but only in a few and only a small number of children have derived the benefit, but under an efficient system as a part of medical inspection, the future of many a child would be materially brightened. The studies of Butler seem to sum up this matter of visual defects of school children in a most admirable manner; he says that refractive errors are extremely common being present in as high as 50 per cent.; these errors are of great importance on account of the immediate symptoms and disabilities which follow their neglect; they are important factors in the production of many painful and disabling affections common enough in childhood, but still more so in adult life: and their early correction is demanded not merely as a means of therapeutics, but as an important measure of preventive medicine.

Of the minor group of diseases as regards numbers which has come to the attention of the inspector, diseases of the ear and especially those attended with impairment of hearing have suggested the importance of detecting the defects on account of the harmful influence exerted upon the pupil. Suppurative otitis media is quite commonly found in the school but bears no relation in its etiology to school work and is of importance to the medical inspector inasmuch as its detection is often followed by a complete change in the attitude of the pupil toward his studies. Unlike eye defects impaired hearing has no effect upon the general health of the individual, but it does seriously impair his ability to properly perform his school work. An illustration of this which may be duplicated more or less frequently in quite a number of schools, being related by A. K. Whitcomb, of a boy 13 years of age and still in the primary grade, utterly incapable of making any headway in his studies. On investigation it was found that his hearing was defective and by giving him proper care his success was phenomenal, as he soon outstripped those who were believed to be far his superiors. In Newark, 27 cases with suppurating ears were found in the schools; 87 in Philadelphia were deaf or had some ear disease; 87 were found in Boston, while from studies made by six observers, an average of 20.33 per cent. were found to have some impairment of hearing. Sexton found 13 per cent. had partial deafness and of these only three per cent. were aware of their difficulty in this respect. In the few places such as Cleveland where some attention has been given to the hearing, the tests have been made by the teacher, a practical method being that of Gale, by which the pupil with chalk in hand stands facing the blackboard and the teacher dictates isolated numbers or words which the pupil writes on the board. Should he not be able to hear properly, this will be readily detected. While this method is fairly satisfactory and enables a rough estimate to be made of the hearing capacity, yet it is far better to have the medical inspector make such examination of the pupils at the beginning of each term in conjunction with the visual examination and from time to time thereafter of all new scholars and of those suspected of having hearing defects.

Defects of breathing or chronic inflammations of the upper respiratory tract are exceedingly common and when of small degree apparently exercise little harmful influence, yet they have a tendency to increase in severity and also to be augmented by unhygienic surroundings. The child with enlarged tonsils or a naso-pharynx filled with adenoids is not capable of doing good work and the results of proper treatment of these cases, amply justifies the work of the inspector in detecting the disorder. Another factor which these children present, is the increased susceptibility which they afford to the dangers of contagious diseases, especially is this true of diphtheria and the child with catarrhal processes of the air passages, enlarged lymphoid glands of tonsils, not only is more liable to contract these contagious affections than is the healthy child, but his chances of recovery are also much less. As a result of the first year's examinations in the Boston schools, diseases of the throat constituted a large proportion of the diseases found in the children and 1,749 were so affected , while of 8,964 pupils examined at a later period, 3,934 suffered from oral and respiratory diseases. Durgin has forcibly called attention to the excessive prevalence of diseases of the respiratory tract in school children and he found that of 9,188 examined, 5,689 had acute or chronic diseases thus located, while for the year 1900, the inspectors found 2,609 oral and respiratory diseases; four months inspection in Chicago resulted in 689 cases of tonsilitis being found and at a later period 788 children were temporarily excluded for the same cause.

Among the conditions found in large numbers by the inspectors, parasitic and skin diseases have been especially prominent, in Chicago during the first few months of inspection, 193 cases of impetigo, 241 of pediculosis, 76 of ringworm and 48 of eczema were found, while in one year 1,289 such cases were denied attendance at school. Boston schools in 1900 contained 3,421 cases of all kinds of skin affections and so common is pediculosis, that the usual rule of referring the child home for treatment is abrogated and in addition to a special card to the parents stating the conditions, it also contains printed directions for killing the parasites accompanied with a printed prescription for petroleum to be used for this purpose. From October 1, 1901, to February 1, 1902, there were found in the schools of Newark 1,041 children with these affections, the greatest number being those classed as vermine of which there were 861 cases excluded, while in Philadelphia within a few months 1,282 cases of skin and parasitic diseases were found, the majority of which were communicable. So prevalent is it for these affections to be brought into the school and there disseminated especially by the uncleanly and poorer class of people, that quite extensive epidemics are occasionally produced.

Where the system of medical inspection is thorough and contemplates a complete supervision of the health of the pupils both as regards diseases that may be brought into school by them and those which may develop as the result of being at school, in contradistinction to inspection which has for its objects purely the elimination of contagious diseases, a group of so-called school diseases will come under the considertion of the inspector and demand considerable tact and patience before appreciable results will have been obtained. Such a group comprises the milder grades of spinal affections and a very large group of nervous affections or neurasthenic symptoms, the causes being as varied as the individuals that make up this class and cannot be noted here except that over study and improper posture are responsible in many instances. Mild grades of spinal deformities are largely incident to school life especially between the age of six and fourteen years and it is probably present in at least 10 to 20 per cent. of school girls; while frequently accompanied with nervous disorders, headache, etc., it naturally keeps the affected individual handicapped and should be carefully watched for both by the teacher and the inspector. In 611 examinations Guillane found 30 per cent. affected with curvature of the spine, while in the schools of Cleveland a large percentage was discovered in the grammer grade rooms. As regards neurasthenic symptoms an increase approximately of from five to 50 per cent. has been found from the lower to the higher grades, so that by careful observation and suitable suggestions the inspector is capable of doing an immense amount of good in this single field alone. The very familiar "nerve sick" school child is unfortunately too common; in England, Warner found 11 per cent. and among the school children of New York, Hamilton found 20 per cent. with various neurasthenic phenomena, while in the higher schools of Moscow nearly 70 per cent. had some nervous malady.

Other diseases characterized by prominent nervous phenomena are also found by the medical inspector and are of import not only to the affected individual himself, but have a most demoralizing effect upon the children with which he is in contact. Epilepsy, chorea, etc., are the diseases to which I here wish to refer and while they exist in the school in but small numbers, yet for the sake of the individual and of those forced to witness paroxyms of these affections, they should be placed under other aspects than those of the public schools. An observer in Springfield (Mass.) found an epileptic and a typical moral degenerate in a single school room and the same observed justly says "right in the public schools is the successful fight against crime, insanity, epilepsy and feeble mindedness to be fought and the battle won, if properly waged." While another observer while in a well-kept school room, was suddenly startled by the sound of a falling body due to one of the scholars having an attack of epilepsy, which was of frequent occurrence. That these are not isolated cases and that such affections are present in the schools is shown by the medical examiner of Salt Lake City, where with but a single man doing the work and necessarily at infrequent intervals, five pupils mentally deficient were found and a girl suffering from epilepsy had to be excluded on account of the consternation produced by her attacks and the general unrest occasioned by the fear of their recurrence. While in Boston during 1900, there were found 14 cases of chorea and six of epilepsy and in Newark five cases of chorea were found and in both these places no special investigations were conducted for nervous affections.

A further duty of the inspector is his determination by personal examination of the presence or absence of a successful vaccination cicatrix on every child admitted to the school. In many places during the past three years on account of the prevalence of variola, this has been insisted on from time to time and its enforcement depends upon two factors, first the nature of the legal requirements in the city or state and secondly, the medical inspector. The future presence or absence of smallpox in this country will undoubtedly to a great extent be influenced by the successful vaccination of school children, the good effects observed from this measure being those due not only to the exemption of the school population from variola, but many parents are thus influenced favorably and will be vaccinated when they had refused before. As as essential requisite for entering school, vaccination should have the same place as other necessary requirements and should be legally insisted on.

One of the many indirect results of medical inspection especially where it has embraced more than the detection of communicable diseases, has been the effect upon the personal hygiene of the child, children who came to school unkempt and often unclean despite the efforts of the teacher to improve their condition, gradually improved in their personal appearance not only at school but they were also more cleanly at home. While this may in itself appear to be a trivial matter, yet it makes a considerable difference as regards such affections as pediculosis, skin disease, etc., and after the pupils realize that the efforts of the inspector are directed toward their good, the number of such communicable diseases will decrease to a great extent. While medical inspection has thus been of value in improving the personal hygiene of the scholar, it has also been of benefit to the teacher in enabling her to remove ill scholars and by detecting physical defects such as those of sight and hearing. It is surely easier to teach a normal individual than one ill, or unable to see or hear normally and for every child that has been helped by the detection and removal of these defects, the work of the teacher has been correspondingly lessened. It has also instructed her in various aspects of school sanitation and as she is necessarily a foster parent of the children under her care for the better part of the day and often a better foster parent than the real parent at home, by increasing her ability to detect an ailing child, the results have been most beneficial. What has been said in regard to the teacher and the pupil is also true to a considerable extent as regards the parents. Instances are continually being presented where a parent antagonistic to the measures at first, has soon seen their value and not only endeavored to detect the early signs of illness in their children at home instead of sending them to school, but the interest of the parents has been gained and a decided step has been made in showing them that preventive medicine has a place not only in the school, not only something which immediately concerns the physician and sanitarian, but it is an essential factor in the home.

In carrying out the ideas embodied in a system of medical inspection of schools, the relation of the individual scholar to the means employed for his education are considered as bearing upon his physical welfare and to obtain the best results from the educational point of view, the physical strength of the individual as regards his routine work must be taken into serious consideration. As has been well said "education gained at the expense of health is a loss," yet each year many children pay the penalty by their lives and many thousands more by serious illnesses. In addition to inspection being a direct, practical and economical method of saving life, it is also of immeasurable value in demonstrating to the mass of people the necessity of preventing disease. In the majority of public schools little or no efforts are made to give instructions towards conserving health and detecting the early stages of the common and often fatal diseases, Michigan has however recognized the necessity for this measure and the so-called "Michigan idea" will well bear copying elsewhere. It consists essentially as a result of the law passed several years ago that "there shall be taught in every year, in every public school in Michigan, the principal modes by which each of the dangerous communicable diseases is spread and the best methods for the restriction and prevention of each such disease." The state board of health sends annually to each public school superintendent and teacher in the state, such printed information as will enable them to comply with the instructions of this wise law. Such a valuable measure in connection with medical inspection as here advocated, would without the least doubt be the means of preserving many lives which are annually lost for the want of such measures, without considering the enormous financial gains to the state.

Any measure which will preserve the resisting power of the individual against disease, is essentially based upon as sound a principle of prevention as is that which for the same reason, endeavors to keep disease away from the individual by preventing him coming into contact with cases of that particular affection. The tendency of the school leads in many instances to the physical deterioration of the pupil and while educators and sanitarians have been and are doing much to make the school surroundings as near ideal as possible, this factor of physical deterioration with its necessarily added risk of lowering resistance, still remains a force to be combated.

Thirty-two States and Territories have compulsory educational laws which compel the child beginning with its sixth, seventh or eighth year to begin its education, the vast majority in the public schools. The state in its relation to the school population thus taking the stand that the age factor is the sole requirement to begin school life and makes no provision for the safeguarding of the child from the communicable diseases with which laws compel it to be brought into almost daily contact. Many children present constant evidence by their impaired physical condition and by attacks of measles, whooping cough, diphtheria, etc., the latter group of diseases beginning to rapidly increase at the opening of each school term, that the age is not the only requirement necessary to commence school attendance. Education implies more than mental development, it also implies physical care and protection and while many communicable diseases will always be present in any community, yet the state should realize that health is a condition of citizenship and protection of the health of its child population, implies a better class of citizens for the future than would be the case were such protection not afforded. The State provides for its paupers who return nothing to it, it makes provision for their physical welfare, it protects them from communicable diseases, yet the school child the support of the State in the immediate future, receives no such care as is given to even the meanest pauper, while for a small outlay a system of preventive medicine could be inaugurated and supported, whose benefits both direct and indirect would effect a salutary influence over the entire populace.

Many a child dull, inattentive or apparently negligent in his studies, is punished for his seemingly continuous neglect and yet the experience derived from medical inspection has shown that the majority of these scholars have been so by reason of some physical defect especially of the eye and ear, the correction of which transformed them into bright, ambitious children. When it begins to be more fully realized that preventive medicine insists on a physical basis of education and that such a system reduces the penalties of education, then will punishment versus physical examination in the schools be a much easier problem than it is at present. In many ways preventive medicine has in the past few years taken a prominent position in the public school system especially from the hygienic aspects, such as the housing of the children in modern sanitary and well-lighted buildings, the diminution of the size of the class thus in a manner decreasing the tendency of close contact of large bodies of children, and also by the recognition of the individual and the adoption of other safeguards against disease, such as medical inspection. Whatever measures may be adopted to reduce both the morbidity and mortality of the school child, must be initiated in the school and the results will soon appear in the home. Medical inspection is not only a duty but it is a privilege, a privilege not limited to a class small in numbers, not to a single disease, but directly bears upon the health of over 20,000,000 individuals and by lessening disease among these, indirectly concerns the entire population and is directed against practically all acute and many chronic diseases which affect not only the child but also the adult. Public safety thereby as regards endemics or epidemics is a great gainer, not only by the prompt recognition and isolation of communicable diseases which medical inspection affords, but also by its educational benefits, is the community at large benefited.

Quite suggestive from the economic aspect is the relation between medical inspection and the extent of losses due to preventable ill-health and deaths. There can be no gainsaying but that preventive medicine adds vastly to national wealth both in the saving of life with its earning capacity and the lessened cost of fighting disease, as preventive measures become more generally adopted and the results become more apparent. While a low estimate of the value of a human life would be $1000, yet should one-half this sum be taken for such purposes, the saving of lives by properly exercised medical inspection alone, would be the means of placing a vast sum to the credit account of the nation. Another side of the economic aspect is furnished by the early detection and isolation of cases of contagious diseases such as diphtheria and scarlet fever and thus by greatly diminishing the number in this way, a financial saving of no small magnitude is effected not only to the individuals quarantined, but also to the health boards who expend considerable sums in effecting such measures. Disease means loss of money and medical inspection by reducing the number of cases of communicable diseases, means the reduction of this loss to a minimum. Wherever paid medical inspection has been tried it has proven to be a sound financial investment and instead of acting as a drain upon the public treasury, the reverse has been found to be the case. In New York City where inspection does not go beyond the detection of contagious diseases, it has "more than saved an excess in the value of coffins for the potter's field, to far more than pay for the expert service." The inspectors of Boston receive $200 a year; of Chicago $50 per month; and of Newark $250 per year, these figures representing the usual average cost per inspector, the total cost varying with the number employed. Wherever the system has been in operation the cost has proven to be comparatively small, while in Milwaukee the Commission of Health stated that the expense seemed so infinitely small in comparison with the enormous amount of good resulting therefrom, that it seems utterly impossible for any person to raise objections on this account.

Like other measures which have a direct bearing upon the prevention and transmission of disease, objections have from time to time been offered, but in the light of its successful operation have been found to be groundless. The principal objection being the cost but as just stated, experience has shown that it more than pays for itself. Other objections raised against it have been the supposed interference with the family physician, with the duties of the teacher and her control over the scholar and the interruption in the school routine each day by the coming of the inspector. It is unnecessary to more than briefly enumerate these, as they have all proven groundless and it has been the experience of those doing this work that both the teacher, the parents and the family physician have recognized its value within a short time after the inauguration of the service and have all aided in the movement. Finally as the success of the measure is to a considerable extent dependent upon the joint action of both the school and health authorities, it has been thought that it would be impossible to have both bodies act in harmony, but the reverse has always proven to be the case and as yet no valid objection of any weight has been offered against it. It is of interest in this connection to also note the legal status of medical inspection, as out of 76,805 examinations made in Chicago, there was but a single lawsuit instituted by parents and in this the only instance which I have been able to discover, Judge Ball of the Superior Court decided that the medical inspection of schools was constitutional and the rights of principals and medical inspectors to exclude pupils for cause, was upheld, the case not being appealed.

MEDICAL PROGRESS.

OBSTETRICS AND GYNECOLOGY.

Simultaneous Intra-uterine and Ectopic Pregnancy.—A case presenting these features is reported by Rivet (Gaz. Med. de Nantes). When first seen, the patient's symptoms pointed to a beginning appendicitis, but a more careful examination revealed the presence of a tumor which, together with the history of suppressed menses, suggested the possibility of a ruptured ectopic pregnancy. This diagnosis was confirmed upon operation, at which time it was noticed that the uterus was increased in size, softened and almost fluctuating and numerous large veins were seen upon its surface. In view of the fact that a certain amount of hypertrophy takes place in the uterus in ectopic gestation, no importance was attached to this condition; but three days after the operation a fetus was expelled from the uterus which was of the same age, though not as well formed, as that removed in the abdominal section.

Extra-uterine Pregnancy.—The history of a case of intra-abdominal extra-uterine pregnancy, delivered at term, of a living child, is reported by W. L. Estes (Phil. Med. Jour., Dec. 13, 1902). The patient, a multipara, aged 30 years, conceived for the fifth time. The pregnancy was considered an ordinary one, only the fetal movements seemed a little different. The normal period for labor was passed, but a month later, during an exertion severe abdominal pains and weakness resulting. Labor was thought to have begun, but as no progress was made and patient was declining, she was sent into the hospital, where a diagnosis of extra-uterine pregnancy was made. Immediate operation revealed, on opening the abdomen, a gangrenous omentum, a ruptured fetal sac and the child lying free among the coils of small intestine. The child was quickly removed after clamping the cord, in a state of suspended animation but was soon revived. The sac was attached to the ascending and descending portions of the great omentum and their mesenteries, to the small intestine, to the right cornu of the uterus, broad ligament, rectum and pelvic fascia. The placenta was attached to the pelvic fascia over the right common iliac vessels and could not be removed. The sac was cleaned out, packed, and the edges stitched to the margins of the abdominal wound. The latter was then closed, leaving an opening for drainage. Patient died however on the thirteenth day from exhaustion. Child survived. Author believes that the placenta in most cases need not be removed and comments on the necessity of extensive drainage. Daily irrigations of the sac may be done through these openings and the placenta gradually exfoliated. If possible, drainage openings should be made in one or both lumbar regions.

Myoma of the Ovary.—True myoma of the ovary is perhaps the most rare of ovarian diseases: and but few cases have been reported. J. M. Baldy (Am. Gyn., Nov., 1902) finds that the literature contains but eight such cases. The case of the author making the ninth. Mrs. D. T., colored, aged 36 years, married 15 years. Had had one pregnancy, which terminated in a miscarriage. Menstruation for the past dozen years had lasted five to seven days, and had been quite free. Three years ago her doctor had told her that she had a tumor, but it had given her no trouble except for an occasional hemorrhage, which would last perhaps as long as ten days. These had yielded to very simple treatment. Examination disclosed a multilocular cyst of the uterus, hard and with the ordinary characteristics of a fibroid. The history was that of an ordinary fibroid and operation was performed for that condition. The specimen after removal, consisted of a uterus enlarged by a multiple fibromyoma to the size of a small cocoanut. The right ovary was nowhere to be found. The left ovary was cystic. Where the fimbriated end of the fallopian tube disappears in the capsule at the top of the tumor, beneath the capsule, an exceedingly small piece of tissue was found which on section proved to be ovarian. The tumors in the uterus were ordinary fibromata. What is the significance of these facts? The first and all important question to decide, is or is not this a subperitoneal nodule of a fibroid uterus? There are but two lines on which such a nodule could develop at this point: First, subperitoneal, in which case it would be subperitoneal at all points of the tumor; Second, a pedunculated nodule, in which case it would come off the uterus and hang free in the pelvis, but would in no way attain the relations to the broad ligament which are held by the ovary or by this tumor on its upper surface. In either case how could we account for the disappearance of the ovarian ligament and the ovary? A broad-ligament tumor would have essentially different relations than those which pertain to this tumor. On the other hand, assuming that this tumor began to develop in the ovarian ligament or in the capsule of the ovary, every possible difficulty disappears and all its relations without exception, are accounted for.

The Mimicry of Pregnancy by Fibroids and Ovarian Tumors.—In examining a patient under forty-five years of age, with a pelvic tumor, every cautious observer invariably takes pains to assure himself first, that the tumor is not purely a physiological one, that is to say, that it is not a pregnancy pure and simple; and second, when a tumor is undoubtedly present, that it is not complicated by pregnancy. Nevertheless, says H. A. Kelly (Am. Gyn., Nov., 1902), large tumors have been mistaken for pregnancy by competent observers. There are four classes in which error in the diagnosis of pregnancy in consequence of mimicry has occurred: (*a*) Those in which there has been a pregnancy and no tumor; (*b*) those in which pregnancy has been complicated by a tumor; (*c*) those in which there has been a tumor but no pregnancy; (*d*) those in which there has been neither tumor nor pregnancy. It is in cases of hard abdominal tumors with ascites that a mistake in diagnosis is most liable to take place. The following are the most misleading factors in cases which are liable to be mistaken, either for pregnancy or tumors: (1) The patient may be very fat, making it most difficult to palpate and percuss an abdominal enlargement with precision; (2) the vagina may present a more or less characteristic violet discoloration; (3) the cervix may be soft; (4) the breasts may be enlarged, painful, and may contain fluid; (5) there may be a cessation of menstruation with more or less nausea; (6) the "Linea Nigra" may be well defined; (7) there may be a regular enlargement of the abdomen more or less closely corresponding to the calculated period of pregnancy; (8) the mass may closely resemble a fetus in the abdomen, presenting a head, body, and limbs; (9) the subjective sensation of movements may be prominent, and to the patient, a factor decisive beyond argument as to the existence of a pregnancy; (10) a perfect abdominal ballottment may be present. However a diagnosis can be made by a thorough examination which pays close attention to all the important signs of pregnancy. First and foremost the fetal heart sounds are always absent, and the pulsation of a tumor which may be mistaken for a fetus if the observer is careful to notice that they are synchronous with the radial pulse. This of itself is decisive. In the second place, even taking the list of mimicking signs given above, no one case presents all of them, and the omission of one or other of the usual important signs should put the observer at once on his guard. For example, it is a most suspicious fact when menstruation has continued through the supposed pregnancy. The author's experience is against this as being true. The presumption is strong against pregnancy when there is an unaltered hard cervix. Where the ascites seems to be present, a careful examination will make the diagnosis conclusive. A recto-vaginal examination under a brief gas anesthesia will clear up the diagnosis and reveal the uterine tumors or the small uterine body with ovarian tumors. Lastly a better knowledge of abdominal palpation in advanced pregnancy will almost always avoid an error in diagnosis.

The Bladder after Hysterectomy.—The intimate connection between the bladder and the uterus makes it easily understood that the bladder is greatly influenced in its circulation and function by all operations which serve to modify the topography of both of these organs. To begin with the simplest operation, the Alexander, says G. Kolisher (Am. Jour. of Obstet., Dec., 1902), neither bimanual examination or cystoscopic examination, performed in different stages of dilatation of the bladder reveals abnormal conditions. Abdominal hysteropexy, ventrosuspension, and ventrofixation in some cases, seems to have a decided influence on the circulation and function of the bladder. The systoscopic examination in such cases revealed an extreme paleness of the mucosa; in some instances the epithelium seemed to be swollen and soaked. If we accept the theory that the desire for urinating is brought on by the stretching of the muscular coat of the bladder, it is easy to understand the hanging of the uterus high up will lead to more frequent calls to urinate. In the case of a virgin operated upon by abdominal hysteropexy, where the uterus was hung rather high, a few days following the operation, the urine became cloudy and micturition so frequent that the night's rest was disturbed. This condition has continued with some diminution for two years. Two cases of gonococcic infection of the bladder were much worse following the same operation and have resisted all therapeutic efforts to stop the trouble. If the bladder be properly stripped from the uterus the bladder will remain intact. The dislocation of the bladder itself does not interfere with its function, if no special complications arise. Quite interesting and peculiar conditions arise if vaginal fixation is performed on account of prolapse and cystocele. In the author's three cases, all of which had had chronic retention within the cystocele, the bladder is spontaneously and completely emptied at each micturition since the operation. If the uterus be stitched too low down to the vagina, it pulls the vaginal wall and consequently the posterior wall of the urethra in such a direction as to distend the urethra posteriorly.

This portion of the urethra is now the mainstay of the continence, and, if weakened, the continence will be impaired. Prompt and definite relief was furnished by the introduction of a pessary.

Craniotomy.—In discussing this most interesting subject, J. D. VOORHEES (Am. Jour. of Obstet., Dec., 1902) comes to the following conclusions as to the propriety and advantages in the operation: (1) Craniotomy is an operation of great usefulness, but one whose field has been narrowed to cases where the child is dead, except on occasions of great emergency and where the mother's life would be jeopardized by a cutting operation; (2) that the operation of itself should be attended with practically no mortality in the hands of a careful operator; (3) that the cutting operations, especially Cesarian section, should be done more frequently in proper cases, inasmuch as the maternal mortality has been reduced almost to nothing in the improvement of the technic of these operations, and inasmuch as almost every baby can be saved.

Puberty in the Girl.—Children, male and female, are much alike up to the period of puberty, says G. W. COOK (Am. Jour. of Obstet., Dec., 1902). They exercise alike, romping and playing together without restraint, but as soon as sexual peculiarities are assumed a marked change is manifest. The girl's whole manner and physic are changed. Her flat and narrow chest expands into a better and more capacious bust for the better accommodation of heart and lungs, and the pelvis increases in its proportions. Menstruation begins and she is perfect. But what do we find as a result of the artificial conditions which surround her? Instead of the beautiful and blooming creature that she should be by nature, her development is far below what is expected, and her menstrual flow is spasmodically and imperfectly performed. To what is this defective development to be attributed? To the "pursuit of knowledge," and the attainment of the fashionable accomplishment, which prevents her taking time to acquire the proper knowledge of how to take care of her body. Instead of urging the pubescent girl to use every endeavor to keep up with her classes, let her be restricted to a very limited amount of study, and see that she be kept out of doors and gain health. Let her eat good wholesome food instead of filling her stomach with as much trash as she will eat. Let her be clothed in proper raiment, untrammeled by stays and trains, and she stands before us graceful and beautiful. "The bearing and the training of a child is woman's wisdom."

Operations upon the Appendages for Sterility.—A laparotomy is an operation which always carries with it considerable risk to life, and the question in regard to the advisability of interference simply for the restoration of this function will depend largely upon the urgency of the desire or necessity for offspring and must be settled according to the exigencies of the individual case. W. M. POLK (Med. Rec., Dec. 6, 1902) reviews a number of instances in which remarkable results have been obtained when previous chronic inflammatory conditions have so changed the ovaries and tubes as to make pregnancy inpossible. The operation will undoubtedly become more and more popular as the danger to life decreases. Simply freeing the uterus and appendages when these are bound by adhesions is sometimes sufficient to restore the function. When the ovary is diseased it should be our aim to leave as much as possible of the normal organ and it has been found that even a small portion may suffice. If a hydro-, pyo-, or hematosalpinx exists it must necessarily be removed, but the cut end may be left free or sutured to the ovary. Everting the opened end and stitching the lining membrane to the outer surface seems necessary when any part of the infundibulum is to remain or when the fimbriæ have been destroyed. When the entire infundibulum is removed the pouting mucous membrane appears to be sufficient to insure potency, but even if it should not be, the surface is too minute to tolerate the added irritation of a suture.

Concealed Accidental Hemorrhage.—This is an interesting and dangerous condition, and it is customary to meet it under circumstances quite different from those of the following case reported by J. W. INGLES (Lancet, Dec. 5, 1902). The patient was a full-time, healthy multipara, aged forty years. The author was called to attend her in confinement about 10 A. M. He went immediately, and was told by the midwife, who was in attendance and had been the greater part of the previous night, that the patient was all right and was making satisfactory progress and that the "colors had broken," but that she did not think the child would be born for some time. He examined the patient and found her pulse to be beating 112 per minute and soft. She was having strong pains regularly, which were to all appearances normal, but the patient said that she did not think they were real labor pains. Her general appearance seemed normal. He then examined the abdomen, which was globular. The fetus could not be made out, but what aroused his suspicions was the fact that immediately upon putting the hand on the patient's abdomen there was an obscure feeling of crepitus similar to that which is felt in a severe bruise with extravasated blood, but by no means distinct. He concluded that the uterus might contain blood, and found on inquiry that the patient was as a rule "full-blooded"; also that she had been stretching herself while papering a room on the previous day and had not felt well since. The author then asked to see all the clothes and cloths she had used and blood she had lost, if any. He was shown 40 drops on a clean linen cloth which she had used; there was no blood-serum or mucus. This was what the attendant had in her mind when she said that the "colors had broken." The blood drops were perfectly clear and fresh. On examination per vaginam, the passages were found to be normal; the os was normal and dilated to admit two fingers while nothing unusual was to be felt in the vicinity. The presentation was normal and the membranes were intact, but my fingers after the examination had on them a little fresh blood. There was no hemorrhage taking place externally. Taking into consideration the patient's previous day's work, her pulse, her pallor, which was not abnormal, but for the fact that the woman was in health, "full-blooded," the fact that her pains were not in character what they ought to be, according to the patient's statement, the freshness of the few drops of blood which were external, and more especially the slight obscure crepitus on palpation and the globular appearance of the abdomen, the author concluded that this was a case not met with by the general practitioner—namely, a case of concealed accidental hemorrhage. He decided that immediate delivery was the best course to adopt, so sent for assistance and proceeded to dilate the os with his fingers. During this time no blood escaped externally. By the time assistance had arrived the os was well dilated. The membranes were ruptured and liquor amnii escaped, mixed with blood. By this time the pulse was occasionally imperceptible, and the forceps were put on, and when the first blade passed the head, blood poured out. The child was immediately delivered, and along with it the cord, membranes and placenta came away, all in one. The child was dead, and the placenta looked as if it had been separated for some time. Following this, the uterus, which was full of clots, was emptied of blood and well contracted by manipulation and ergot. No blood was lost after this, and contraction was obtained immediately after the uterus was emptied. The patient had the same appearance and her mind remained very clear. Her pulse varied, being sometimes perceptible and sometimes imperceptible. She was given stimulants constantly. Saline rectal injections were given, but the poor woman gradually became pulseless and collapsed.

Polyhydramnios.—By polyhydramnios is meant more than two pints of amniotic fluid at full term, says E. P. Davis (Ann. of Gyn. and Ped., Dec., 1902). The placenta is often large, dropsical, amnion and chorion thickened and fissures may occur in the epithelial layer of the amnion. Any fetal condition causing venous engorgement tends to produce polyhydramnios. The diagnosis depends on the determination of pregnancy, and we can usually detect faint uterine contraction, or can insert a finger through the cervix and detect a presenting part. Polyhydramnios may complicate ectopic gestation as well as intra-uterine pregnancy. When pregnancy is ascertained other collections of fluid associated with pregnancy must be differentiated from, as ascites and ovarian cyst, or pleural pregnancy, hydatid mole, a large child or a malformed fetus. In ascites the dulness changes when the position of the patient is altered; in hydatid mole the pear-shaped uterus has little fluctuation and there is repeated discharge of blood; a large or malformed fetus is revealed by palpation. There is a noteworthy absence of such tension upon the membranes as would be expected from the quantity of amniotic fluid. Polyhydramnios is dangerous from over-distention, relaxation, hemorrhage and increased danger of sepsis. Labor may be precipitated and should not be induced unless the distention increases so rapidly as to impair the woman's health. After labor the uterus must be made to contract with a hot intra-uterine douche of one-per-cent. lysol, tamponing with gauze, the hypodermatic injection of strychnine and ergot and other measures. Occasionally the excess of fluid disappears by absorption.

The Hereditary and Intra-uterine Transmission of Agglutinating Properties and Formation of Agglutinins by a Fetus.—The experiments performed by Dr. Yurevitch (Bolnit. Gaz. Bot., No. 44, 1902) with typhoid bacilli on rabbits and guinea-pigs. In one series of animals the immunization took place before the animals became pregnant and in the others during pregnancy. The results of his experiments show that agglutinins from the blood of the mother is directly distributed to the blood of the fetus. This takes place even if one does not immunize the mother, but inject intravenously agglutinins. But on the other hand, the fetus also acquires the power to form agglutinins, and this property it retains long after it is born. Occasionally the serum of the fetus is a great deal stronger in its agglutinating power than the serum of the mother.

EYE, EAR, NOSE AND THROAT.

Easy Diagnosis of Eye Inflammation.—Starting on the assumption that the red appearance of the eyeball is common to most eye inflammations, Wood and Woodruff (Med. Stand., Dec., 1902) offer a scheme for readily distinguishing the commoner forms of eye inflammation from one another and from non-inflammatory affections. The three main types are: (*a*) Eyeball wholly or partly reddened without discomfort or other symptom. (*b*) reddened and uncomfortable, but without actual pain. (*c*) red and distinctly painful. The only condition under (*a*) is subconjunctival hemorrhage, which is innocent unless recurrent or in patients over forty (suspect Bright's disease or heart lesion). In class (*b*) are hyperemia, foreign body, phlyctenular and most forms of acute and chronic conjunctivitis. In hyperemia the everted lids are redder than the ocular conjunctiva, there may be smarting, itching, or a foreign body sensation, and there is no secretion except a little at the inner canthus. If there is a scratching sensation look for foreign body. Phlyctenules or pimples are commonly seen on the surface of the globe surrounded by blood-vessels, and are easily recognized. In most forms of acute and chronic conjunctivitis there are smarting, burning, of foreign body sensations, mucous or muco-purulent discharge which glues the lids together in the morning, injection and swelling of the conjunctiva and a loss of its transparency. The intra-ocular tension is normal, and the redness does not usually extend to the margin of the cornea. The red and painful eyeball (*c*) is seen in iritis, glaucoma, phlyctenules of the cornea, ulcer of cornea, scleritis, episcleritis, ocular neuralgia and gonorrheal conjunctivitis. In iritis the redness begins in the corneal region, the eyeball is tender to touch both in eye and above it, there are photophobia and a copious flow of tears and the pain is worse toward evening. The pupil is contracted. In glaucoma the pain occurs in attacks during which the tension is markedly increased. There is but little secretion and slight photophobia and the pupil is normal in size or dilated. Phlyctenules of the cornea occur in childhood, and are accompanied by intense photophobia (blepharospasm), a copious watery discharge, and the "snuffles." Ulcer of the cornea is easily detected, especially with the fluorescein test. Scleritis and episcleritis cause pinkish-red (not deep red) exudates with little or no secretion, are usually rheumatic, and when cured leave a purplish stain. Ocular neuralgia is unilateral, with no eye symptoms except pain and slight redness. Gonorrheal ophthalmia is known by the intense injection and edema of the conjunctivæ, great swelling of the lids, profuse purulent discharge and the history of gonorrhea.

Laryngeal Carcinoma Cured by the X-Rays.—A case which is supposed to be the first to be cured by the Roentgen rays is reported by W. Scheppegrell (N. Y. Med. Jour., Dec. 6, 1902). The tumor had reached a size which interfered seriously with respirations and had involved so much of the larynx that a radical operation seemed almost useless. The X-rays were used mainly to satisfy the desire of the patient, and were applied to the laryngeal region of the neck, reliance being placed upon their penetrating qualities for their effect upon the intra-laryngeal tumor. Twenty applications were made, and as the only benefit observable was the diminution of pain the patient was sent home with the introduction to return at the end of two weeks if he thought he had been improved. At the end of that time upon examination it was found that the tumor had almost entirely disappeared, and the symptoms of dyspnea, expectoration and fever had abated. After two weeks more of treatment the ulceration had entirely healed. An examination two months later showed the larynx to be in excellent condition except for the loss of tissue of the left vocal cord due to the previous ulceration. Of course, it is still too soon to prognosticate a permanent cure.

Proper Drainage of Tears.—Most methods of operation the tear duct for the permanent establishment of the drainage of tears have been found unsatisfactory. Continuous probing of a strictured duct is not only painful, but usually ineffectual, and induration and new tissue formation often follows the use of the ordinary probes. A new system of graduated probes has been devised by J. W. Wamsley (Phil. Med. Jour., Dec. 20, 1902). These can be retained in the canal, and permit healing to take place about the probe, rather than have it repeatedly stretched and bruised by frequent probing. They are made of copper wire, gold plated and highly polished, ranging in length from 32 to 40 mm. and in diameter from No. 19 to No. 6, English standard wire gauge. One end is bent at a right angle and rests in the canaliculus. After probing the duct with a fine wire probe, one of these may be introduced and left in place for several days to be succeeded by increasing sizes. Only the first introduction is usually painful. It is sometimes necessary when the stricture recurs to provide a tube for draining the tears into the nose. The author has modified the ordinary tube by making the beak longer and the opening at the bottom angular and pointing anteriorly. He also recommends the use of a tube which is flexible, and has devised one made of No. 30 gold wire, which is carefully wound over a probe which corresponds in length and diameter to the size of the canal. This may also be left in place in the canal, and can be readily introduced or extracted by a simple form of probe which has been made for the purpose.

Hypopyon Kerato-iritis.—The destructive nature of this disease, as regards the vision of the affected eye, is well known. Therefore, treatment of it, especially of severe forms, is important. A new departure in the management of this disease is noted by G. H. BURNHAM (Lancet, Dec. 6, 1902). He had three cases of the disease, in each of which the duration of time since the onset of the disorder varied from three to eight weeks, so that the affection had become thoroughly seated, including a severe cyclitis as well. The infiltration in each case occupied the center of the cornea to an extent larger than the area of the pupil, and the pus in the anterior chamber was on a level with the lower margin of the pupil The pupil was also bound down, and dilated but little, if at all, under the use of atropine. The eyeball was deeply injected, and the pain was severe and long-continued. The treatment always advocated and relied upon is the local, and internal, *i.e.*, constitutional remedies occupy a secondary place. He does not rehearse the list of local remedies, which is long, and in many ways, of great merit. However, in the type of which he is speaking, where the corneal tissue is so extensively diseased, their use often fails to check the downward progress, or, if it does, so tardily that great damage is the outcome. His treatment is purely constitutional, save the dropping into the eye of a four-grain solution once every day or every second day, of atropine, and the casual bathing of the eye with a little hot water or boric acid. It consists in the use of his combined treatment, viz.: mercury and iodide of potassium taken internally, and pilocarpine given hypodermically. The upward trend of the disease has soon shown itself in the pain being quickly relieved, in the infiltration having a sharper margin, in the pus in the anterior chamber lessening, and in the surrounding healthy cornea becoming brighter and clearer. And, moreover, the improvement once established, always lasts, *i.e.*, no relapse takes place. In one case that came very late under the author's care, and looked very desperate before the disease could be checked, a leakage began to take place through the ulcer, so that the iris lay against the cornea. Even here the result turned out well, and the adherent tissue has gradually given away, so that now there is a very fair anterior chamber. In this treatment, moreover, the opacity left keeps ever growing less in size and denseness, so that finally it will disappear or only a non-disfiguring opacity be left. This treatment has several excellent features: the rapid relief of pain, the cure of the diseased condition with at least as great certainty as by the other methods, if not with greater, the gradual and uniform removal of the corneal opacity, and the absence of any pain immediately associated with the form of treatment used.

On the Local Action of Trichloracetic Acid.—CARL MUND (Arch. of Otol., Oct., 1902) translates Dr. Hugo Schwabe's article on the above subject of scientific value for the definiteness of its information by experiment on animals as well as on both dead and living human tissue. Conclusions are these: This acid entirely lacks the property of deep action on tissues. Clinical reports of its action on nasal mucous membranes speak of the characteristic absence of inflammatory reaction. He cites the experiments of others and gives his own. In both animals and on human tissues he found that only the epithelial layers and the uppermost layers of the mucosa had been destroyed unless deep mechanical pressure were used in applying it. He noted that the action of the acid ceased at the glandular ducts, these being apparently closed while the epithelium in the depth of the ducts was intact. Action on tonsils was also superficial and not destructive of deeper tissues. But its superficial action he regards as valuable as a protective in place of a dressing or bandage, and is indicated in hay-fever and other conditions with too-abundant secretion, which it checks by uniting with the albumin of the secretion and preventing escape of the fluid discharge for several days. After that it needs to be repeated for this effect. Use of it for deep cautery, therefore, is a disappointment.

Post-operative Management of Intra-nasal Surgery.—In the Laryngoscope, Oct., 1902, M. A. GOLDSTEIN recommends cleansing the nasal passages anteriorly and posteriorly by a warm alkaline solution before any operation, deprecating neglect of this and of the protective dressing when operations are done on cold days. He uses a nasal plug or tampon after every operation, to be carefully adapted to the entire surface of operation, previously saturated in benzoinol and covered with vaseline. It adapts itself easily to the crevices and curvatures, does not saturate by hemorrhage as dry cotton does, and is easily and without harm to the tissues removed. For pressure purposes he would substitute Simpson's prepared compressed cotton splint, whose thinness and absorbing qualities are needed. This dressing also favors healing without undue granulation. Would not leave a first dressing longer than 48 hours. In bleeding from posterior end of inferior turbinate he would pack with gauze introduced through the naris by forceps curved on the flat and adjusted by the forefinger of the other hand introduced behind the palate. Especially in operations for removal of the middle turbinate would he require packing with Simpson's splint covered with gutta-percha tissue. He speaks commendably of Lutz's splint of malleable gutta-percha. After the Asch operation he uses the compressed cotton splint changed every other day.

Methods of Using Argyrol.—Under this title a paper was read before the Tri-State Medical Society by A. C. BARNES, (Jour. of Eye, Ear and Throat Diseases, Sept.-Oct., 1902), in which he advocates its use as follows: In diseases of the eye, where formerly silver nitrate or protargol were used, because of deep penetrative action and unirritating properties, a 20-per-cent. solution of argyrol corresponds to a 10-per-cent. solution of silver nitrate, yet it may be dropped into the normal eye without irritation or discomfort. In purulent conjunctivitis a 25-per-cent. solution is to be used for routine work. Ophthalmia neonatorum thus treated, he claims, will be eradicated in two or three days. A 50-per-cent. solution may be used in severe cases of gonorrheal ophthalmia, instilled every two or three hours. In nose and throat use 10-per-cent. solution accomplished better results than the silver nitrate, without causing the harsh and dry sensation of the latter. It reduced the thickness of the lumpy secretions from the nose. In chronic purulent otitis media, 50-per-cent. solution modifies the purulency to a mucoid discharge. It is unirritating and efficient in genito-urinary infections and inflammations; also, in specific urethritis. Kevin uses 10 per cent. in urethra and bladder and 1 to 2,000 or 1 to 1,000 for vaginal douche. It is not chemically changed as is silver nitrate by the secretions. It has deeper penetrative power, carrying the effects of the silver into the deeper submucous structures. It does not destroy tissue in almost any strength used.

PEDIATRICS.

Prevention of Summer Diarrhea.—Perhaps no better results in preventive medicine can be shown than those which have followed the careful attention in feeding and watching tenement infants. The infant mortality from intestinal derangements has oftentimes been astounding in many of our larger cities during the summer months and the most regretable part of it all is that it is largely unnecessary. C. G. Kerley and J. L. Hughes (N. Y. Med. Jour., Nov. 22, 1902) in their hospital and dispensary work have had opportunities to observe most satisfactory results from their attempts to educate the poor and ignorant mothers who are always anxious to do their part in saving their children's lives, if sufficient interest and exactness is displayed by the attending physicians. Each mother is impressed with the necessity of using only the best and cleanest milk and provision has now been made so that even the poor may obtain this. When the first symptom of stomach or intestinal disturbance is noted the milk diet is at once stopped by the mother and an equal quantity of barley gruel is substituted. A small dose of castor oil is also given and the child either brought to the dispensary or physician. If there is vomiting, calomel in one-tenth grain doses is given for six or eight doses. If there is diarrhea the following mixture is given every two hours:

℞	Bismuth Salicyl......................	gr.j
	Bismuth Subnit......................	gr.x
	Arom. Syr. Rhei......................	♏iij
	Aquæ q.s. ad.........................	ʒi

When the stools and temperature warrant it, the milk diet is very gradually resumed. During the past summer fifty tenement children, all under one year old, were chosen at random and careful instructions were given the mothers in regard to feeding and reporting any untoward symptom to an attending physician. Among these there was not one death. It is reasonably believed that not more than one or two per cent. of summer diarrhea cases should be lost, if proper prophylactic measures are taken.

Acute Plumbism in an Infant.—Poisoning through indirect channels and by accident in children with lead is rather a medical curiosity. The following remarkable example of lead poisoning in an infant is reported by H. C. Cadman (Lancet, Nov. 29, 1902). On Nov. 8, he was called to see an infant, five weeks old, who had been very constipated for several days, and for some time had been losing flesh; he had had several attacks of colic, and vomited curdled milk. In such cases the author makes it a point to look to the condition of the feeding-bottle, if one is used, but in this case the infant was suckled by the mother, who was a healthy-looking woman. The abdomen of the child was hard and swollen, and the umbilicus was contracted, but not the abdomen itself. The child's general appearance was unusual. He looked too ill to be suffering from ordinary stomach ache, and his face had such a peculiar gray color that he might have been actually dying then. Nothing to indicate obstruction could be felt in the abdomen. Hot flannels were ordered, and three powders given, consisting of one-eighth of a grain of compound powder of ipecac and 2½ grains of carbonate of bismuth, a teaspoonful of castor oil to be taken previously. He also directed the mother to give up nursing for 24 hours, and to give the infant barley water with a spoon. On the ninth the bowels had been moved; the child had been fairly free from pain, and had only taken one powder, as these were only to be taken if pain came on again. The barley water was ordered to be continued and no breast milk to be given. On the tenth the child looked rather better; the abdomen was not so hard, he had had another attack of colic, but not so severe, and had taken another powder. He had vomited. The author had given permission for the mother to give him the breast again. On her preparing to do this, he noticed that she had a piece of lead over the nipple, and on her taking this off, I saw that the milk had dissolved some of the lead; the skin of the nipple was sodden and white, looking like skin after lead lotion had been used. It became evident that the infant was suffering from lead poisoning. On Nov. 11 a piece of a napkin saturated with the infant's urine was sent to a competent chemist who boiled it in distilled water, and found that the resulting liquid, when evaporated to a small bulk and treated with potassium bichromate yielded distinct precipitate of yellow chromate of lead. Another portion of the same liquid, treated with potassium iodide, yielded distinct crystals of iodide of lead in golden-yellow, flat, square plates. A piece of the napkin placed in the sulphureted hydrogen showed several black specks of sulphide of lead. The child is improving.

Sarcoma of the Kidney.—Notes of a case of sarcoma of the kidney in a four-year-old child, in which nephrotomy and recovery are reported by T. J. Walker (Lancet, Nov. 29, 1902). The child was taken to a physician on Sept. 26, suffering from pain in the abdomen, diarrhea and inability to pass urine. The physician found the bladder, distended, a high temperature (103.8° F.) and pain in the left iliac fosa. The child was sent home and put to bed, and a trained nurse was engaged. The catheter was required for four days, when frequent micturition set in. The temperature ran up each evening to 103° F. There were some pain and distinct swelling in the upper part of the right iliac fossa. A provisional diagnosis of appendicitis was made. On October 10 there were slight distention of the bowels and a tumor in the abdomen at the junction of the lumbar and iliac region, the most prominent part being above the line from the umbilicus to the anterior spine of the ilium. The chart showed an evening temperature of close on to 104° F., with an occasional drop for 24 hours. The tumor could not be made out in the lumbar region behind, and the author concluded that it was inflammatory. The patient remained in much the same state up to a week later. The tumor then was more prominent. Percussion did not much assist the diagnosis, and the author determined to explore. He made an incision and opened the peritoneum sufficiently to introduce the finger. He found the tumor retroperitoneal, extending from beneath the liver into the iliac fossa, and across the spine beneath the middle line. Being satisfied that the growth was renal, he closed the peritoneal cavity, made a T-shaped extension of the incision, and with considerable difficulty enucleated and removed the kidney. The child bore the operation well and made an uninterrupted recovery, the temperature falling after the operation and remaining normal or subnormal. The kidney was infiltrated with sarcoma; it was of the size of the author's half-closed hand.

PHYSIOLOGY.

The Mechanism of the Retention of Chlorides.—The disappearance of chlorides from fever urines, according to T. SOLLMAN (Am. Jour. Phys., Dec. 1, 1902), is due practically entirely to the deficiency of chloride income. The mechanism of the retention of chlorides is not explained by any physical theory, but must be a vital process. Less secretion and increased reabsorption are probably both concerned in the retention. The filtration theory of urine formation is inadequate.

Potassium Cyanide and Unfertilized Eggs.—The discovery that by means of weak solutions of potassium cyanide he could prolong the life of the unfertilized eggs of the sea-urchin, led Loeb to interpret the action of this drug as an inhibition of the catalytic processes that result in necrobiosis or death. F. B. GORHAM and R. W. TOWER (Am. Jour. Phys., Dec. 1, 1902), as the result of a series of researches at the Marine Biological Laboratory, Woods Hole, Mass., conclude that the action of potassium cyanide is only an indirect one, *i.e.*, killing or inhibiting the bacteria and thus giving the eggs a more favorable environment. In all experiments with unsterilized sea-water the protozoa enter as an important bacteria-destroying factor which must be considered in interpreting the results. Sterile sea-water prolongs the life of the egg of the sea-urchin much longer than Loeb's most favorable cyanide solutions. Both the experiments of the authors and those of Loeb show that too strong solutions of potassium cyanide and too long exposure to weak solutions soon kill the egg. From this the interpretation is that potassium cyanide is a poison for all living matter but it acts more quickly on bacteria than on sea-urchin's eggs; it is in no sense a prolonger of life. From the fact that unfertilized eggs can be kept in sterile sea-water for eleven days or longer, it would seem that the specific mortal processes of Loeb are as yet hypothetical phenomena without any definite experimental basis.

THERAPEUTICS.

Hyoscine in Treatment of Drug Habit.—On account of the recent literature upon hyoscine in the treatment of drug habits, H. C. RUSSELL (Med. Rec., Nov. 29, 1902) reports a case of a morphine and cocaine habitué who at one time was using 60 grains of morphine daily. Hyoscine hydrobromate in doses of one one-hundredth grain to three two-hundredths grain were given hypodermically once or twice daily, combined with strychnine and digitalis, according to the need for stimulation and at the end of three weeks the patient was discharged apparently completely cured of the desire for either drug. During the first few days he was kept in a somewhat stuporous condition by the use of hyoscine.

Incontinence of Urine and Epidural Injections.—The method of Cathelin was practised in nine cases of enuresis by M. LOUMEAU (La Méd. Mod., Nov. 12, 1902). In eight cases the treatment gave good results; these were cases of nocturnal infantile incontinence with diurnal pollakiuria. In the ninth case the incontinence was permanent as the result of excessive urethral dilatation; treatment in this case should of course be surgical. Among the eight cases first mentioned four were promptly cured and have had no trouble for several months. In the other cases the diurnal pollakiuria disappeared promptly and the nocturnal trouble has become less frequent. These results were particularly gratifying because all these cases had proven refractory to the medical treatment usual in the treatment of enuresis. In the introduction of the serum or the cocaine solution the sacral route was utilized.

Therapeutic Value of Bismutose.—Bismutose is an albuminous compound of bismuth which is supposed to lack the toxic action of other salts of this metal. It is a fine, yellowish powder, not soluble in water and free from odor and taste. The gastric juice does not affect it so that it may pass the stomach unaltered; the pancreatic juice has a slight solvent action which can however be disregarded. H. STARCK (Münch. med. Woch., Nov. 25, 1902) finds that the drug is a better astringent than other salts and is more serviceable in the treatment of gastric ulcer, since it combines more readily with acids. Its best effects are however seen in cholera morbus and in the acute gastritis and acute and chronic gastro-enteritis of children. Even infants do not object to it. The usual dose is six to 10 grams daily in frequently repeated doses of one-half to one gram.

Injections of Mercuric Bichloride in Puerperal Septicemia.—Injections of corrosive sublimate into the median basilic vein yielded excellent results in a case reported by T. SILVESTRI (Policlin., Nov. 22, 1902). Five mgr. of the drug was used in the first injection, and daily injections in decreasing doses were given for three days, till but two mgr. were used. No toxic effects were seen even after the five mgr. dose, and Silvestri feels that his method of treatment would be of value in all septic cases.

Guaco in Eruptive Fevers.—Attention is called to the merits of this drug by L. BUTTE (Jour. Med., Paris, Nov. 30, 1902). Its antipruritic qualities he found most advantageous in measles and scarlet fever; the remedy being used internally and externally. A "maceration" of guaco applied to the skin is said to cause a transitory hyperemia followed by prolonged anemia, with alleviation of itching and consequent lessening of restlessness. The eruption is also believed to subside earlier under this treatment. Internally, syrup of guaco is to be given, a teaspoonful to a dessertspoonful three or four times daily.

Hypochlorhydric Dyspepsia.—The treatment of this condition is thus outlined by O. LEMOINE (Nord. Méd., Dec. 1, 1902). For the immediate relief of symptoms, a tablespoonful, at the beginning of each meal, of the following: Distilled water, 300 gr.; hydrochloric acid, 4 gr. To stimulate secretion of hydrochloric acid and pepsin, a bitter, preferably quinine, as, bromhydrate of quinine, one gr.; syrup of bitter orange peel, 150 gr. A teaspoonful in hot water a half-hour before meals. For the stimulation of the musculature of the stomach, a pill containing powdered ipecac and nux vomica, of each .02, to be taken a half-hour before eating. This has almost invariably given excellent results in the author's hands. As an antifermentative sulphur acts well and assists in overcoming the constipation which usually accompanies this condition. This the doctor gives in a cachet containing washed sulphur and magnesia, of each .50, two being given daily; one an hour or two after meals. If treatment of constipation be necessary, full, warm irrigation of the bowel every night is preferred; as it has been found that a muco-membranous enterocolitis is common in this condition. If there be much distention of the stomach, massage is to be practised. This the patient may himself perform by crossing the hands over the abdomen and pressing the stomach upward under the false ribs; this is believed to assist the restoration of vitality to the musculature.

THE MEDICAL NEWS.

A WEEKLY JOURNAL

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THE AIR IN THE SUBWAYS.

With the prospect of a speedy termination of the frightful upheaval of the New York city streets looming close, the question of its interior ventilation is one of paramount importance.

The recent experiences in the "tuppenny tube," London's latest underground railway, is one which calls for urgent discussion and enhances the desirability of a thorough understanding of what provision is being made by our subway engineers.

In London it has been noted that many passengers, especially those who were riding long distances in the underground electric, suffered from intense headaches and even symptoms of air hunger. So many were affected that an investigation became imperative and it was found that the amount of carbonic dioxide gas in the tunnel was in great excess of the normal limits.

Some recent figures that are presumably authentic we present herewith. During hours of limited traffic:

	Carbonic acid in 10,000 volumes of air.
On platforms at 8:15 A.M.	4.23
On platforms (Saturday), 7 P.M.	3.74
In elevator, 10:10 A.M.	7.36
In cars, 9:30 A.M., from city	4.33
In cars, 1:30 P.M., from city	5.33

During hours of heavy traffic:

On platforms, 4 to 7 P.M.	11.04
In cars, 9:30 A.M., to city	16.65
In cars, 4 to 5 P.M., from city	13.74
In cars, 6 to 6:45 P.M., from city	15.54
In cars, 6:10 P.M., from city	20.46

The carbonic acid tests were made between December 11 and 15. The range of outside temperature was between 37° and 56° F. The range of temperatures on the platforms was between 56° and 76° F. and in the cars between 66° and 76° F. The barometric pressure throughout the period of the experiment was very constant, ranging between 30.1 inches and 30.2 inches. Readings with the anemometer showed an air movement due to forced draught and train movement of from one mile to five miles per hour. Some of the tests were made with the Chattaway and Wharton apparatus, and some by the Pettenkofer method. One method was employed to check the other, and the mean average result was 16.62 volumes of carbon dioxide in 10,000 volumes of air. This is an amount much above the bearable average.

It had been assumed that, inasmuch as the cars were in such close connection with the surrounding tubular masonry, that an entire renewal of the air would result from the powers of suction. Apparently this has been a forlorn hope, for all that has been accomplished has been the pushing around in a circle, as it were, of the vitiated atmosphere of the tunnel.

Have the engineers of the subway considered this problem sufficiently; and what of our new tunnels under the North River and to Brooklyn, in all of which the problem is destined to be one of extreme seriousness?

Underground railways, such as these, permit of the accumulation of enormous quantities of confined air that must be removed or regenerated. It is idle to discharge this question with the familiar "diffusion of gases" theory—the dangers are real and are soon to be met.

The necessity for some definite outlining of plans as to what is to be done by the engineers of the various tunnels to obviate these grave dangers is apparent, and competent sanitary engineers as well as the New York Health Department should be taken into consultation.

THE NEW YORK CORONERS.

In the graveyard scene of Shakespeare's Hamlet, after a particularly specious and unconvincing explanation of the law with regard to suicide and accidental death, which shows that even in Elizabethan times, family influence could be used to advantage in covering up family failings, the second clown asks, "But is this the law?" And the first clown answers, "Aye, marry, is't (that is, it is) crowner's quest law." Crowner is the old word for coroner and Shakespeare's caricature was evidently meant as a bit of deserved satire on that ancient but not respected institution, just three hundred years ago. The office still exists, however, and its abuses, and opportunities for perversion of law instead of diminishing have increased in the more complex civilization of our large cities.

There have been for many years movements inaugurated with the end in view of abolishing the coroner's office by legislative enactment; establishing in their stead a board of medical examiners, who shall furnish accurate and, as far as possible, full information concerning deaths under suspicious circumstances. This system has already been tried for many years in Massachusetts with eminent satisfaction. In some of these advances in legal matters it seems well to remember that, as was said not long ago, Massachusetts, besides being a State of the Union, is much more than this, it is "a special state of mind."

Under the proposed law, the medical examiner shall have nothing to do with the legal side of the case. The present coroner, as a relic of ancient English law, besides being a medical official is a legal officer. It is the legal side of the coroner's office that has been especially liable to be misused and it is because of this union of disparate duties with consequent opportunities for legal abuses that lawyers have been particularly anxious to secure the abolition of the cornor's office, as at present constituted.

Already in one county in New York State, that of Erie, as the result of an especially flagrant violation of law and order, the coroner's office has been abolished and medical examiners appointed. The change has been accomplished to the eminent satisfaction of both the legal and medical profession. There seems no reason to think that the same change could not be accomplished in New York City with the result of doing away with the present complaints as regards the board of coroners and at the same time furnishing opportunities for serious medico-legal research that will prove of great service to American medicine and to the teaching and investigation of the knotty points that are so often involved in medico-legal cases.

At the present time this is a branch of medicine that does not receive its due share of attention here in America. While large European cities, such as Paris, Berlin, and Vienna, have medico-legal institutes that are not only a credit to civilization, but secure valuable material for study and give contributions to the science of legal medicine that are of importance to all the world, New York is almost entirely without any such institutions and most other cities of this country are similarly placed. In Massachusetts, since the abolition of the board of coroners and the establishment of the medical examiners, a series of most valuable medico-legal papers involving original investigation of a high order and noteworthy scientific results have been published. If for no other reason than this, the abolition of the board of coroners would be eminently desirable. Under present conditions it is practically impossible that such investigations and proper teaching opportunities in this subject should be provided.

We are prone to complain of the contradictions of our medico-legal experts on the witness stand in this country. The fact of the matter is that no satisfactory opportunities for the development of genuine medico-legal experts are provided. The pathological material for such opportunities is ample, but our antique laws preclude its proper use. If we wish seriously to develop the science of legal medicine and with it a body of medico-legal experts whose authority shall be real and not imaginary, and whose testimony shall not be a mass of contradictions, then an important step must be the abolition of the board of coroners in New York City.

IS THIS WOLF-WOLF?

For years the medical journals have been trying to convince the practitioner of the widespread evil of substitution and adulteration in drugs. But the profession has turned a half credulous, half indifferent ear, as if bored at the familiar sound of "Beware of Substitution," and "None genuine without this mark." They have in some instances hinted that it was necessary for the journals to support their advertisers: and have firmly believed that the adulterations were confined to proprietary medicines put up in labeled bottles and taken at the public's risk.

How many physicians make a practice of going behind the scenes and watching the preparation of a prescription, and how many if they did so would be able to tell by the form in which the crude drugs were handled whether they came originally from reputable sources, or whether they were bought by the honest but misled druggist, from middlemen who successfully adulterated their wares?

From the laboratories where the exact potency of an absolutely pure drug is determined for endorsement in the U. S. Pharmacopœia, to the druggist's counter where supposably the same potency is being handed out on a physician's carefully written prescription there is often so wide a variation that one wonders whether it would not be safer for us to go back to the days of herbs and simples, and to cull and brew our own remedies.

At last the Health Department of New York has brought to the attention of the medical profession through the daily press, a forcible reminder of the widespread practice of substitution and of the adulteration of drugs. The medical profession has for years been thwarted in the greatest emergencies by the false values of the remedies furnished to their patients in their prescriptions. But the public has treated them with that tolerant, easy-going air of good-natured understanding, as though one should say "It *is* hard to see another man getting one's profits," and has given the warning no more thought than would be bestowed upon a patent medicine vender's earnest plea to "Take no other," and "Beware of substitutions."

Commissioner Lederle has set in operation a wholesale examination of the stuff that is commonly sold as phenacetin. His physicians and staff have purchased phenacetin powders from 373 drug-stores, in Manhattan and Brooklyn. The official report gives the names of all, and includes many well-known drug-stores, and department stores. *Among these samples, only 58 were found to be pure phenacetin, while the greater number, 315, were adulterated.* The chief adulterant was found to be acetanilid, selected undoubtedly because of its cheapness, and its similar effects, in part, to phenacetin.

In the sale of an ordinary ten-grain pure phenacetin powder, the druggist makes a little over 200 per cent. He buys the phenacetin at $1.00 per oz. and retails it in small quantities at $3.20 per oz. If his adulterant be acetanilid it is bought at the rate of 2½ cents an ounce, leaving him his sales almost clear. This mean and petty money traffic need not, however, be laid at the door of the retail druggist alone. It is important to lay the blame, however, where it is due, for the question is one with a double moral issue. The physician does not trouble himself about the druggist's profits or his sense of honor in dollars and cents; but he has his patient's health in his hands, and when he finds, if he ever does learn, that a cheap heart depressant such as acetanilid given in his prescription instead of the drug on whose certain action he is depending, he is justified in his honest indignation.

This is by no means a single instance. Nearly every drug in the Pharmacopœia is adulterated, and as such fails to give the desired action. So great has this evil become that we often confess to one another that we prescribe less and less, and confine ourselves to a few fundamental drugs, remedies which we think we obtain from reliable sources and give in cases of necessity, leaving our patients to take their favorite compounds of tonics and appetizers on their own responsibility.

If drugs could be treated sacredly, exactly, and conscientiously by the druggists, and by the public, as they are in hospitals, in experimental laboratories, and as physicians themselves treat them, the practice of medicine would be a much more satisfactory profession than it is at present.

We trust that in this particular case the New York Board of Health, which does nothing by halves, will trace this scandal to its source, and further, we hope that physicians and druggists will prove as energetic as are the manufacturers of cereals and baking powders in establishing pure food laws, and will bring the enactment about pure drug laws, that will at least serve as a warning to offenders, and a caution and protection to the trusting prescribers and buyers of drugs.

ECHOES AND NEWS.

NEW YORK.

New York Prison.—The New York State Prison Commission, in its annual report, recommends the employment of penitentiary convicts in agricultural work and on highways, and of jail convicts on highways, and protests against legislative exemptions from the provisions of the convict labor law. "If one industry is exempted," the Commission says, "the result is the transfer of the men engaged in the making of that product to some other industry. One class of labor is benefited at the expense of another class, which is unfair to the latter." An enlargement of Sing Sing Prison, to accommodate 500 more prisoners, is suggested.

Drug Substitution and the New York College of Pharmacy.—Whereas, the substitution of one article when another is called for, or of an article of one brand when that of another is ordered, involves an act of deception and an abuse of the confidence of physician or patient, and an act of injustice toward the manufacturer of the article so specified, and Whereas, the general commission of such acts is destructive of those mutual relations of confidence between manufacturer, pharmacist, physician and patient upon which the highest success of medical practice depends, and Whereas, such practices appear to be increasing at the present time, and threatening serious professional and commercial difficulties, therefore, it is Resolved, that the College of Pharmacy of the City of New York publicly condemns all acts of substitution whether in prescription work or in ordinary trade; that it declares such practices to be violations of just dealing, opposed to the principles of professional ethics and subversive of good morals, and it is further Resolved, that we exert our utmost influence both as individuals and as an institution, to discourage such practices and to promote professional and commercial confidence.

Lectures on the Neuroses and Psychoses of Spirits and Drug Addictions.—Dr. T. D. Crothers, of Hartford, Conn., will deliver a course of lectures on Alcoholism, Morphinism and other Drug manias, in the hall of the New York School of Clinical Medicine, 328 West Forty-second street, between Eighth and Ninth avenues. These lectures will be given on the first Tuesday of every month, at 11 A.M. and 8 P.M. The profession are cordially invited to attend.

Sex Determination.—Prof. Gage, the distinguished embryologist of Cornell University, delivered a lecture on the subject of "Sex Determination and Maternal Impressions," at the Cornell University Medical College Building on Friday, January 23, at 5 o'clock.

Medical Society of the State of New York.—Members of County Medical Societies and the profession of the State generally are invited to attend the Annual Meeting of this Society, which is to be held in Albany, January 27 and 29, 1903. Reduction in railroad fare can be secured by obtaining at the station, on starting, a certificate which, when endorsed at the meeting by the secretary and the Special Agent of the Trunk Line Association (who will be present the first two days), will entitle to return at one-third fare.

Alumni Mt. Sinai Hospital.—The sixth annual reunion and dinner of the Associated Alumni of Mount Sinai Hospital, was held at the Arena, 41 West Thirty-first street, January fifteenth, Dr. Samuel M. Brickner, presiding. Interesting addresses were made by Mr. Isaac Stern, the vice-president of the hospital, Emil Gruening, M.D., F. P. Foster, M.D., Mark Blumenthal, M.D., William F. Fluhrer, M.D., B. Sachs, M.D., Nathan E. Brill, M.D., Percy Friedenberg, M.D., and Walter M. Brickner, M.D. The following officers were elected for the ensuing year: President, Edward Friedenberg, M.D.; Vice-President, George L. Brodhead, M.D.; Secretary, Charles Goodman, M.D., and Treasurer, Eugene H. Eising, M.D.

Obituary.—Dr. Susan R. Pray, one of the conspicuous women physicians of Brooklyn, died last week in her home at 436 Washington avenue. She had been ill since November last. She was born in Brooklyn forty-five years ago, and was a graduate of the Post-Graduate College. After graduation she practised in Brooklyn for three years and then decided to go to China as a missionary for the Woman's Foreign Mission Board of the Methodist Episcopal Church. She was in China two years. Her health failed, and she had to return to Brooklyn.

PHILADELPHIA.

Officers of Pediatric Society.—At the meeting held January 13, the following officers were elected: President, Dr. D. J. Milton Miller; Vice-Presidents, Drs. J. H. Jopson, A. A. Eshner and J. H. McKee; Secretary, Dr. C. H. Weber; Treasurer, Dr. H. B. Carpenter; Recorder, Dr. D. L. Edsall.

Polyclinic Celebrates Twentieth Year.—The Twentieth Annual Meeting of the Corporators of the Philadelphia Polyclinic and College for Graduates in Medicine shows that the year has been one of progress in all departments. New properties adjoining the hospital and on the opposite side of the street have been secured and much-needed improvements will be added as soon as funds are secured.

Dr. James Leaves Estate to Charity.—The will of the late Dr. Bushrod W. James bequeathes to the city of Philadelphia a property on Mount Vernon street, all his instruments and office appliances, and $55,000 for the following purposes: The maintenance of "an institution for the examination, treatment and operation of eye, ear, nose, throat, cardiac and pulmonary diseases." His books and an endowment of $40,000 are given for the support of a free library.

Clinical Report of a Case of Tubercular Leprosy.—This report was made by Dr. J. V. Shoemaker at the meeting of the Philadelphia County Medical Society held January 14. The patient was a male Russian, who entered the Medico-Chirurgical Hospital one year ago, presenting a condition that had been diagnosed mycosis fungoides. The man had been in this country eight years and had always apparently had good health. Two years previous to his admission the appearance of pimples on the back of the hands was noticed. Afterward they appeared successively on the face, back, breast and arms. The mucous membrane of the nose and throat was unaffected. On admission, there were closely packed tubercles on the face and scalp. No pus was present in those locations, but from tubercles on the arms some pus escaped. The diagnosis of leprosy was made. Dr. Shoemaker gave the differential diagnosis between mycosis fungoides and leprosy, the principal points being that the former is preceded by erythema and followed later by itching, especially in the eczematous form. There is edematous infiltration in mycosis and the formation of tumors. Anesthesia is not present as in leprosy. Microscopic examination of the tissues will settle the diagnosis with great readiness.

The Lepra Bacillus in the Circulating Blood.—Dr. L. Napoleon Boston, who examined the blood of Dr. Shoemaker's case, reported the findings of the examination. Blood was taken from one of the patient's fingers at a point where the skin was apparently healthy. The flow of blood was quite profuse. The erythrocytes were pale and took the stain but slightly. Macrocytes and microcytes were present, the former predominating. Forty nucleated red cells were seen while counting two hundred leukocytes, thirty being normoblasts and ten megaloblasts. Differential count of the leukocytes showed 60 per cent. of polymorphonuclears and nearly nine per cent. of eosinophiles. Lepra bacilli were found in the blood, both in the plasma and in the leukocytes. Two was the smallest number and eight the largest in any of the leukocytes contained bacilli in large numbers.

Leprosy Not Dangerous in This Country.—In discussing the papers Dr. H. W. Stelwagon said that he doubted the existence of the long incubation period assigned to leprosy by some writers. He believes that it is not more than a very few years at the most. The eruption may be present and not noticed for some time. The method of invasion is obscure. Many claim that the disease is hereditary, but the discovery of the bacillus lepra suggests the possibility of contagion. However, we should not regard with fear a case of leprosy in our midst. Lepers are treated in the general hospitals of Vienna and Paris without spreading the disease, and there is no reason why they should not be so treated here. From the few cases that have been in Philadelphia no contagion resulted, though one of them was an assistant clerk in a large hotel for more than a year. If contagious, as generally believed, each case should have given rise to ten or even one hundred more. Tissue weakness is the only hereditary legacy concerned in propagating this disease. Dietetic, climatic, and hygienic conditions are the active causes in the spread of leprosy. The disease is gradually disappearing where the people are not segregated. There is no reason for secluding lepers as is done here, it being exceedingly doubtful if the disease can be transmitted under the conditions of living as now observed. The speaker characterized the method used in dealing with lepers in Philadelphia as being inhumane and stated that he would not notify the authorities if he saw a case. He would have the man leave the city and go where he could be properly looked after.

Leprosy in a Native of Philadelphia.—Dr. Jay F. Schamberg said that most of the small number of cases that had been treated at the Municipal Hospital were Chinese but various nationalities were represented. The last patient that was admitted was a native woman of Philadelphia who had never been outside the city. The contagion must evidently have been brought to her in some manner. The disease, however caused, is one in which the contagion is transmitted with a great deal of difficulty. If we recognize the so-called lepra bacillus as the cause of leprosy we must also accept the view that it is contagious. It probably requires long contact and some peculiarity of the individual to induce transmission. This can hardly occur in temperate climates. Arguments against the theory that fish bear the contagion are the facts that the lepra bacillus has never been found in them and that leprosy occurs in people who have never tasted fish.

CHICAGO.

Election of Dr. Billings.—Dr. Frank Billings has been elected president of the Cook County Hospital staff, and Dr. L. Blake Baldwin secretary.

Election of Dr. Webster.—Dr. George W. Webster, at a recent meeting of the State Board of Health, was elected as president.

Visiting Nurses' Antituberculosis Crusade.—A communication from the Visiting Nurses' Association was read at the last meeting of the Society in which was asked the endorsement of their effort to limit the spread of consumption, and the following motion was carried: That the Chicago Medical Society cordially endorse the antituberculosis crusade on the part of the Visiting Nurses' Association, and that we offer the Visiting Nurses' Association every help, individually and collectively, that shall have for its object the suppression of tuberculosis.

A Case of Spina Bifida Without a Sac.—Dr. A. R. Small read a paper on this subject and reported a case. At 8 P.M., Dec. 29, 1901, he was called to attend Mrs. G. L., aged 20, a primipara, in the first stage of labor. The cervix was just beginning to dilate; and the first stage of labor was not completed until afternoon of Dec. 30. The position was L.O.A., the pelvis normal, but the pains were weak and inefficient. Toward midnight, as the natural pains seemed entirely inefficient to accomplish delivery, he applied the forceps. There was no rupture of the perineum, but a slight tear simply through the mucous membrane at the entrance to the vagina on the left side, which was immediately repaired and healed by primary union. The mother recovered without a particle of fever. On examining the child, he found the following conditions: At the point at which spina bifida is usually found, *i.e.*, at the junction of the lumbar vertebra and sacrum, there was entire absence of membrane of any kind over the cauda equina for the space of one inch. The skin was wanting over a space two and a half inches in diameter, and from the edge of the skin there was a gradual slope to the cauda equina, which could plainly be seen for the space of one inch. As there was no membrane whatever present to cover the cord, he decided to trust to nature to throw up granulations over the cord as the best measure of repair, fearing, however, that before nature could repair the defect the spinal canal would become infected, or the drainage of the spinal fluid would prove fatal. He placed a large pad of absorbent cotton over the parts, secured by a bandage. The drain of spinal fluid was extensive. He had no way of estimating the exact amount, but the dressings were saturated several times a day. He thinks there must have been several ounces of fluid lost daily. Granulations filled in rapidly, and the cord, or cauda equina, was entirely covered by granulations at the end of a week, and the spinal fluid had ceased to flow. There were no convulsions, nor other nervous symptoms. During the first week, while the spinal fluid was flowing out so copiously, the babe passed very little urine, but as soon as the flow of spinal fluid was shut off by granulations, the flow of urine became free. Healing continued, and at the end of a month the opening was entirely filled up with granulations and covered with skin. He called May 12, 1902, to see the child, and found that hydrocephalus had developed. The mother told him that the child had not been ill at any time except having had a slight cold. Hydrocephalus in this case was probably due to shutting off the flow of spinal fluid after it had been formed so abundantly. It seemed remarkable to him that the child could lose so much spinal fluid for several days, one week, without any symptoms of disturbance. Probably it had become accustomed to such loss in utero. When the membranes ruptured during labor, the contents of the amniotic sac had a milky appearance, probably due to the admixture of spinal fluid. The author had searched the literature at his command, but failed to find a parallel case. Cases of spina bifida are not infrequent, but cases of entire absence of any kind of membrane over the cord, he believes, are rare.

Treatment of Progressive Deafness Based on Differential Diagnosis.—The author of this paper, Dr. J. Holinger, stated that in treating cases of progressive deafness otologists obtained excellent results in some cases, while in others, apparently identical so far as the conditions were concerned, the results are disappointing, both to the otologist and patient. Formerly, the result of the treatment, rather than the examination, revealed the diagnosis. "Treat the patient for two weeks, and you will see whether or not he can be cured" is the advice given by text-books. He said the consequence of this empirical and unscientific method was mistrust of the profession against the men who represented this specialty, the prejudice of the public amounting to complete nihilism, which was expressed in these words, "Nothing can be done for the ears," and consequently the patient was tossed like a ball from one doctor to another without getting a definite answer to the question, "Will I hear again?" He believes that either yes or no is the answer that can be given in over 95 per cent. of the cases after the first examination. Before reporting cases, he gave a short sketch of the development of our knowledge in this direction. The knowledge that several pathological conditions can produce the clinical picture of progressive deafness is old, and a number of names were supplied, such as dry catarrh, hypertrophic catarrh of the ear, catarrhal deafness, etc., which had little meaning for the pathologist. Anchylosis of the stirrup in the oval window was a pathological condition known to be a cause of deafness. However, no knowledge of the symptoms existed, and hence no diagnosis *in vivo* was possible until Bezold, in 1885, first showed that in a patient, who, during his life, suffered from progressive deafness with only one pronounced symptom, namely, a constantly negative Rinne test; there were extensive changes of the bone surrounding the labyrinth which led to anchylosis of the stirrup. During the following ten or fifteen years large numbers of examinations were made by Bezold, Politzer and Siebermann, which led, on the one hand, to the establishment of a characteristic group of symptoms, together with what is known as Bezold's tripod of symptoms, and, on the other hand, to the recognition of a pathological process in the temporal bone described as spongifying, which takes place in the bony capsule of the labyrinth, most often in the neighborhood of the oval window, and which in some cases leads to anchylosis of the stirrup in the oval window. The symptomatology and pathology becoming more and more known, a scientific basis was created, and a large number of cases of deafness were defined and differentiated from the rest. These were the cases that from the start proved intractable to any treatment, and many of the cases after years of treatment were worse than those that were of equally long standing, but had never been treated. The influence of long treatment is shown in the following case: Mr. E. A. V., forty-five years old, dentist in Salt Lake City, was referred to the author by Professor Senn, Dec. 11, 1900. He could not hear loud shouting in either ear. In 1894 he noticed, first, that he became deaf, but his wife states that the trouble dated farther back. For five or six years he was faithfully treated in Salt Lake City, with massage, inflation of the Eustachian tubes, cauterization, and trephining of the nose, etc. His ears never discharged or pained him. Both drumheads were normal, and air entered freely through the Eustachian tubes into both middle ears. The only remnant of hearing which was left was a small insula from e_2 to a_3 by air conduction, and á for a short time by bone conduction. Patient is certain that the treatment impaired his hearing. The author's directions, therefore, in all similar cases have been to keep away from treatment. A similar case was reported. The other group of cases mentioned by the author are those of affection of the Eustachian tube, which often gives excellent results and always has a more favorable prognosis. The Benzold tripod is absent. Here the diagnosis often calls for persistence in treatment, and demands patience where success is slow. Cases falling under this head were reported. In closing, the author desired to leave the impression that otologists need not depend upon haphazard methods, but he believes they can make a final diagnosis and prognosis after the first or second examination in these cases of progressive deafness. The advice of text-books for trial treatment of two weeks is frequently not enough, but often it does harm.

In Memoriam.—A committee of the Chicago Medical Society, consisting of Dr. Joseph A. Capps, M. L. Harris and Robert Zeit, appointed to draft suitable resolutions on the death of Major Walter Reed, made the following report: In the death of Major Walter Reed, U. S. A., the medical profession has lost one of its most distinguished members. Dr. Reed was graduated from the medical department of the University of Virginia in 1869, and from the Bellevue Hospital in 1872. In 1875 he became assistant surgeon in the United States Army. A determining period of his life began when he undertook the special study of bacteriology and pathology under the stimulating influence of Dr. Welch at Johns Hopkins University. His contributions on experimental subjects and later his conduct of the Army Medical Museum bore the stamp of exceptional ability. When he undertook the investigation of yellow fever and its cause every step of the procedure marked the workings of a trained mind combined with a tireless energy and undaunted courage. Without hesitation he carried through a series of experiments which endangered his own life and that of other volunteers to prove that a mosquito is responsible for conveying contagion of yellow fever. As a result of his suggestions preventive measures were instituted in Cuba which have already robbed the scourge of its terrors.

RESOLVED, That the Chicago Medical Society record an expression of its regret in the untimely death of Dr. Reed, and be it

RESOLVED, That the above be entered in the minutes of the Society and a copy of the same be forwarded to his widow. The resolutions were adopted.

CANADA.

Undesirable Immigrants.—Dr. W. L. Ellis, the newly appointed quarantine inspector at the port of St. John, last week ordered the deportation of sixty immigrants, most of them being afflicted with trachoma.

Personal.—Dr. L. W. Cook, Truro, Nova Scotia, has gone to Newfoundland where he will take charge of the practice of Dr. Herbert Smith of Buren, while the latter is taking a post-graduate course abroad.

Montreal General Hospital.—The Endowment Fund of the Montreal General Hospital still keeps growing. A $5,000 donation has lately been received from a woman friend of the institution.

McGill's New Gymnasium.—Lord Strathcona has promised to give $20,000 for the erection of a new gymnasium for McGill University. The students had already contributed among themselves $1,000. The graduates will also be approached; and it is proposed to make the gymnasium a memorial of the Seventy-fifth Anniversary of McGill.

St. Francis District Medical Association.—The regular meeting of the St. Francis District Medical Association of the Eastern Townships of the Province of Quebec, was held on Jan. 14. Dr. Stevenson, Inspector of Public Buildings, proposed that a memorial be presented to the Provincial Government regarding the curriculum of the Protestant public schools of the province, holding that this should de revised and that a number of subjects struck off. He also drew attention to the very bad system of ventilation in the public schools of Quebec.

Vaccination in New Brunswick.—At the last session of the legislature of the Province of New Brunswick an Act was passed providing that all children before being admitted to the public schools of the Province, should produce to the satisfaction of the teacher, certificates of successful vaccination within three years preceding such application for admission. Several of the boards of health sent out notices that a physician's certificate must be produced, but the Attorney-General has ruled that this is not necessary, but that a certificate of the parent or guardian, verified by a solemn declaration, will be sufficient compliance with the Act. As parents in many country districts in that province have been in the habit of procuring vaccine points and doing the operation on their own children themselves, the decision of the Attorney-General is considered to be an important one.

The Proposed Children's Hospital for Montreal.—Last week the Organization Committee in connection with the proposed memorial hospital for children to the late Queen Victoria, held a meeting and decided that the new hospital should act as an adjunct to the general hospitals of Montreal. It is hoped to secure a site on the side of Mount Royal; and as many of these cases are tuberculous bone affections, the situation is considered to be a desirable one. Dr. A. McKenzie Forbes is the secretary of the Organization Committee.

Obituaries.—Dr. Henry W. Day, Belleville, Ont., who for the past twelve years has been registrar of the county of Hastings, died on Jan. 10. He was seventy-two years of age and formerly practised his profession at Trenton, Ont.

Dr. W. S. McKay, physician in charge of the hospital at the Superior Lumber Company's camp, Port Arthur, Ont., died on Jan. 10.

Dr. A. S. Fraser, Sarnia, Ont., one of the best known physicians in Western Ontario died on Dec. 31, of Bright's disease, at the age of fifty-six years. Dr. Fraser was a graduate of Queen's University, Kingston, and for several years was examiner in physiology for the Ontario Medical Council. He was largely instrumental in the establishment of the Sarnia General Hospital in 1896 and since that time had been president of the Hospital Board up to last November when he resigned on account of ill health.

GENERAL.

International Medical Congress in Madrid.—The central committee of Europe having in charge the interests of the International Congress of Medicine, to be held in Madrid, April 23 to 30, has named the Voyages Pratiques of Paris as the official agency to make all arrangements for the transportation and lodging of those attending the Congress, to furnish membership tickets, and to organize and conduct a series of tours through Spain. The Voyages Pratiques is authorized to make the bookings for express trains, sleeping cars, hotels, and private lodgings. The regular trains being few in number and always overcrowded, it has arranged for a number of special trains, but since places in these will be filled early, those who expect to attend the Congress should make their applications as soon as possible, to insure accommodations. This is especially advised, owing to the extreme difficulties of travel in Spain, and the overcrowding and irregularities which may occur unless proper precautions are taken. The Voyages Pratiques are enabled to offer members the advantage of 50 per cent. reduction on the railways, for round trip tickets. In order to facilitate the arrangements of the American physicians and scientists who expect to attend the Congress, and to centralize the correspondence in this country, the Voyages Pratiques has appointed the tourist firm, Dr. and Mrs. Howard S. Paine, of Glens Falls, N. Y., as its American representative, with full authority to act for it in all the capacities enumerated above. Address all inquiries for information to Dr. and Mrs. Howard S. Paine, 148 Ridge street., Glens Falls, N. Y.

Health Officers Reelected.—The State Board of Health of Maryland held its annual meeting last week. Dr. William H. Welch was reelected president, and Dr. James Bosley, Dr. Howard Bratten and Mr. J. D. Noel Wyatt were chosen to serve as members of the executive committee. Dr. W. R. Stokes was reelected bacteriologist and Caleb W. Rohrer as assistant; W. D. B. Penniman as chemist and Charles W. Mitten as inspector.

Dr. Fulton and Dr. William H. Welch, who have been appointed delegates from the State Board of Health, went to Washington Monday to attend the plague conference which convened in that city on Jan. 19.

A Pension That Should Be Granted.—Major Walter Reed, Surgeon, United States Army, died recently and left his family very ill provided for. Unfortunately, his physical condition had deteriorated after he entered the army so that he was unable to obtain any life insurance. The debt that this country owes to Dr. Reed can scarcely be estimated in money, for it means the saving of untold annoyance to many of the people of the United States, of millions of dollars to our merchants, and of an enormous number of human lives in the future. To him more than to any one else is due the discovery of the cause and the means of prevention of yellow fever. For the first time in 170 years Cuba is free from yellow fever and no longer a menace to the health and commerce of all our Southern cities as well as of our Northern cities, which yellow fever has visited on more than one occasion with very serious loss, both of business and of life.

During the Civil War the greatest indignation was excited in the North by the alleged attempt to introduce yellow fever through the clothing of persons dead of the disease. We know now that persons who have never had yellow fever can wear such clothing with perfect safety and that the disease is spread not through clothing, but by mosquitoes. All the annoyance of quarantine, disinfection of person and clothing and ships hereafter will be entirely unnecessary, provided the proper precautions are taken to prevent the spread of the disease by the mosquito. If ever any man's family deserved a pension from his country for the most valuable services rendered, Dr. Reed's deserves one. We hope that Congress will see fit to give his wife and children the very modest sum of $4,000 a year, which a bill now pending asks for. No money can ever pay for such services as Dr. Reed's; but we can at least prove that we are a grateful country by ministering to the comfort of his family.—*New York Sun.*

Dr. John Connell of Jersey City has been appointed medical inspector of the Hudson County Board of Health, to succeed Dr. Charles C. Hendrik. Dr. Connell will resign as a member of the board to accept the place, which pays $1,500 a year.

Obituary: Dr. R. H. Goldsmith.—Dr. Robert H. Goldsmith, died suddenly last Tuesday night of heart failure. Dr. Goldsmith had been practising medicine for over half a century and was one of the best-known physicians of Baltimore. He was a man of extended cultivation and broad sympathies, was actively identified with a number of charitable associations and for many years had given his professional services freely to several institutions. Though he had a large practice, he found time for many private charities, and only those to whom he has given assistance were aware of the extent of his benefactions. Dr. Goldsmith was descended from an old Maryland family, the founder of which, Charles E. Goldsmith, came to this country from England in 1732 and settled in Maryland; and since that time, with the exception of a period of about ten years, some representative of the family has lived in the State. Dr. Goldsmith was the son of John and Eliza Goldsmith and was born in this city February 26, 1832. His collegiate education was received at Loyola and St. Mary's College, on North Paca street, now the seminary of St. Sulpice, where some of his classmates were Bishops Thomas and John Foley and the late Joseph Heuisler, well known as a lawyer. After completing his college course he studied medicine at the University of Maryland, taking his degree there in March, 1852. Though he was still under age, he was appointed coroner, and in this capacity in the following summer was called on for active service after the terrible railroad accident of July 4, near the Relay on the Baltimore and Ohio.

Dr. Frederick J. Bancroft, of Denver, died in San Diego, Cal., from heart disease last week. He was born in Connecticut in 1834, and wrote extensively on the effects of climate upon certain diseases.

CORRESPONDENCE.

TRANSACTIONS OF FOREIGN SOCIETIES.

French.

TREATMENT OF APPENDICITIS—VAGINAL PROCIDENCE—LIGATURE OF THE INFERIOR CAVA—TREATMENT OF NEURALGIA BY INJECTION OF ATMOSPHERIC AIR.

Lucas-Championierre, at the Society of Surgery, Dec. 17, 1902, presented a contribution on the subject of the treatment of appendicitis. He said that he was amazed at the extreme divergency of opinion existing among surgeons and practitioners upon this matter. There are, in the first place, two general schools of treatment, namely, operators during the attack and operators after the attack. In some instances they are so distinctly separated that the one will not operate during the interval and the other will not operate during the attack. For his own part, he is also impressed by the frequency of mistakes in diagnosis which lead to operations upon patients who are not at all the victims of an appendicitis. As a matter of fact, however, more recently diagnosis has been made more accurate and the number of errors has been very materially decreased. On the other hand, he has been convinced by authorities like Dieulafoy of the frequent impossibility of prophesying the ultimate outcome of an appendicitis, and he has also been convinced of the necessity of operating, notwithstanding the risk of committing an error in diagnosis, in order to save from death patients whom only a precocious intervention may save. In a series of 44 cases on whom he has operated during the stage of suppuration, he has lost 12, of whom 11 were absolutely beyond hope. Of the 32 cases who recovered, several were in such bad condition that they would certainly have died without operation. In another series of 85 cases on whom he had operated during the interval, or during the subacute initiatory stage, he had 85 recoveries. So far as the dangers of purgation are concerned, on which so much has been insisted, he said that the consensus of opinion and that his own concurred with a large number of American surgeons, who do not believe absolutely in the dangers of purgatives during appendicitis. On the other hand, he is entirely convinced of the dangers of opium, and this is contrary to the statements of Kirmission. The most severe cases he has seen are those which, at the outset, took opium and had ice applied to the abdomen. In fact, in a certain number of these cases he feels that the opium itself was responsible for the degree of appendicitis, for he has operated on people who probably, at the outset, had very little inflammation, which increased under the influence of the drug. The difficulty with the drug is, that at best it masks the symptoms and permits the progress of the disease directly under the eye of the surgeon, and notwithstanding his presence. So far as leaving the appendix in, in case of abscess with pus suppuration is concerned, he feels that it is not followed by such fatal results as was once supposed. In his own experience, he does not recall one case where a permanent fistula followed this treatment.

Richelot said that in a recent communication in which Delbet had described a new procedure for perinorrhaphy, confusion had arisen between the actual appearances of the perineum and a procidence of the vagina. These two conditions should be distinguished, one from the other, because many women have a severe prolapse of the vagina without any tears in the perineum. This difference has great importance from the standpoint of treatment. A simple tear of the perineum is usually cured by a simple operation, while procidence, on the opposite wall of the vagina, necessitates a complex operation, namely, the repair both of the perineum and the vaginal wall. So far as the technic of the operation is concerned, he considers Delbet's method to be concerned chiefly with establishing a muscular plane by suture of the levatores muscles. It did not necessarily concern retraction of the vagina by the incision of a large amount of tissue from it. So far as the necessity of using gold wire is concerned in this region of the body, he is not convinced that it is required for the reason that catgut itself holds so well, and for so long a time that it does not give way before the wound is strong enough to stand itself.

Delbet said that the Society had requested him to present a report of two observations of calculus pyelonephritis, which were addressed to him by Herosso of Bucharest. In both of these patients, the operator, in order to appreciate the value of the kidneys supposed to be healthy, performed prolonged catheterism. He preferred this method to that of separation of the urine, which did not permit of collecting the urine for 24 hours consecutively. Ureteral catheterism, applied only to the diseased side, brings about a danger of infection on the opposite side. According to this method it is possible to collect separately the urine from both kidneys. During the course of a nephrectomy in one of these individuals, this operator tore the inferior vena cava, and endeavored to suture up the tear, after passing a temporary ligature above and below the tear. This ligature of the vein was not followed by any disturbance of the circulation, contrary to what might be supposed.

Marie, at the Medical Society of the Hospitals, on Dec. 12, 1902, read a paper on the treatment of neuralgia by the injection of atmospheric air, in the name of Crouzon and himself. The results which he obtained in a certain number of cases of neuralgia by means of subcutaneous injections of atmospheric air were given. This method was introduced by Cordior of Lyons, and consists of injecting at the painful point a quantity of filtered air, from a liter to one-half liter. In a number of cases of sciatica, in one case of zona, and in one tabetic who suffered with an area of hyperesthesia, the disappearance of the pain was almost immediate. This observer believes that the good effects of these injections are due to a kind of elongation of the nervous extremities through the presence of the gas, making it comparable to the stretching of the sciatic nerve itself for sciatica.

SOCIETY PROCEEDINGS.

JOHNS HOPKINS MEDICAL SOCIETY.

Regular Meeting, December, 1902.

The President, Dr. William Osler, in the Chair.

Certain Forms of Cyanosis with Polycythemia.—Dr. Osler said cyanosis is a common symptom. It is seen (1) in a large group of heart cases: (*a*) Congenital heart disease, (*b*) acquired heart disease, especially in mitral cases. In this form the cyanosis may be long continued; one case in this hospital had cyanosis over the entire body over three years. (2) In pulmonary diseases. Here cyanosis is comparatively rare. Sometimes seen in tuberculosis but most marked in emphysema. Only in emphysema and congenital heart disease will a patient be able to walk into the doctor's office and frighten him by the intense cyanosis of his face. (3) In Raynaud's disease. Here it is due to vasomotor disturbances and is localized in the hands and feet. (4) In rare cases of scleroderma, or in certain cases with obscure etiology. In one case of abscess of liver seen here, there was marked cyanosis for weeks, of such a degree that the impression of the hand remained upon the body for several minutes.

Two recent cases which have come under his observation, belong to this last group. The first is that of a male who has been admitted to this hospital four times, giving the same history on each occasion. He complains of persistent nausea, and vomiting and constipation. He presents a remarkable degree of cyanosis of the lips, chest and hands. The condition of the blood is striking. On May 20 the blood count was 10,200,000 red corpuscles, hemoglobin 115, no especial change in the leucocytes. The lungs, heart and kidneys are normal. The blood pressure is 142.

The second case is that of a male whose appearance is most striking, especially on a cold day. His face is livid and his ears indigo-blue. The hands are constantly cyanosed. His blood count also shows 10,000,000 red corpuscles. His heart and lungs are negative. There is a trace of albumin and a few casts in the urine. His general condition is good, and he is only short of breath on misty or cold days.

Nothing is known as to the etiology of this type of cases. Cabot has reported two, and Saundby, of London, has likewise seen two cases. The high blood count is of interest. It sometimes occurs in stomach diseases, where there is much nausea and vomiting. In the second case described there are no gastric symptoms whatever, and in the first case the cyanosis persists even when the stomach is at rest.

An Interesting Case of Paraplegia with Recklinghausen's Disease.—Dr. Thomas said that he reported this case at Dr. Osler's request on account of the nervous manifestations. The patient is a female, fifty-one years old, who has always lived on a farm in West Virginia. No similar condition has occurred in any other member of the family. The past history is unimportant. The patient has always noted certain tumors on her body; one on the back of her right ear she remembered as a child. She also remembers to have seen pigment-spots on her skin. Five or six years ago these became so numerous that she showed them to a doctor. The last tumors to appear were on the face. Her present illness began five years ago, with a stinging pain in one ankle, making her think that her clothes were on fire. The pain occurred at short intervals, gradually extended up the leg, involving the lower back, then went down into the other leg. Two years ago she commenced to have similar pains in the arms and at the same time began to drag one foot. Gradually it became hard for her to get about and for the past year she has been confined to bed or to a reclining chair. During the last three months she has been unable to move herself and her arms have become so weak that she cannot arrange her hair or knit. From the first there has been jerking in the muscles and at times, ringing in the ears. Six months ago dysphagia came on and her voice became thick and nasal. There were no bladder symptoms at first, but for the past month she has been catheterized daily. The patient complains ot pains and stiffness in the body.

On examination the entire body and extremities are found covered with a great number of tumors, varying in size from the smallest papule to that of a large cherry. There are also many pigmented areas and certain bluish spots, which seem to indicate that new tumors are to be formed at their site.

On consulting the monograph of Alexis Thompson on "Neuro-fibromata," it is seen that this case belongs in the group of false neuromata, among the diffuse overgrowths and is to be regarded as belonging to the variety "Cutaneous Neurofibromata (Molluscum fibrosum)." Associated with the cutaneous growths are certain subjective sensory symptoms. The cranial nerves are negative until we reach the tongue, where fibrillary tremors are seen. The muscles of the shoulder girdle are affected as well as those of the arm, and there is evidently a condition of muscular atrophy in the upper extremities. The legs are paralyzed up to and including the hip, except that the patient can move the toes of the right foot, and can abduct the great toe of the left foot. The ankles are flaccid. There is great atrophy of the legs. The deep reflexes of the arms are retained, while those of the legs are lost. Electrical reactions are good except in the hand; in the legs there is only a slight response in the muscles which are still active. Sensation is unimpaired except over the tumors. The eyes are uninvolved. We have then a symptom complex including muscular atrophy, loss of certain deep reflexes, subjective sensory disturbances, with a retention of objective sensory activity.

The literature on the subject has been well summed up by Adrian, in *Beiträge zur klin. Chirurgie,* 1901, p. 1. He says that the nervous symptoms accompanying neuro-fibromata are of many kinds but that they are all comparatively rare, subjective symptoms occurring most frequently. Paralyses are rare. The process may be due to a neuroma situated outside the dura and pressing on the cord, producing symptoms of paralysis similar to those in Pott's disease. In the last number of *Archiv für Psychiatrie* there is a description of neurofibromatosis of the central nervous system.

No case has been reported exactly corresponding to the one here presented. Neuromata are usually situated on sensory nerves but rarely choose them alone. It is very rare to have motor nerves affected alone. In one case reported there was gliomatosis of the cord associated with neuro-fibromata. One possibility is that the blood-vessels have been affected and that the pressure on them has cut off the nutrition of the cells in the anterior horn, thus causing great atrophy in the latter. Every nerve from the cord may be involved. In this case the lesion seems to be extending upward.

Dr. Osler said that the failure of mental strength is a characteristic which is seen in this as well as in two previous cases.

Rectal Surgery.—Dr. Ball exhibited with a stereopticon sixty pictures, chosen from the series of three hundred with which his father had illustrated his Lane lectures at San Francisco. The cases had been photographed with stereoscopic lenses and from the photographs thus made drawings were made by artists to preserve the stereoscopic effect. The slides used in this lecture were photographs from these drawings. The illustrations covered the anatomy and pathology of the rectum, as well as several of the operative procedures used by Mr. Ball.

The Clinical Value of Blood-Pressure Observations in Regulating Stimulation in Sick Children.—Dr. Henry Cook said that hitherto, variations in blood-pressure have been indicated by the expressions "rather better" or "distinctly worse." Especially in pediatrics such expressions give little idea as to the state of the arterial pressure. The principle now advocated is the determination of this pressure by accurate instruments. The instrument is a modification of Dr. Cushing's instrument, which is in turn adapted from the instrument used at Riva Rocci's clinic. A continuous column of air passes from the bulb through a tube into the band which surrounds the arm or leg of the patient and connects with a mercury manometer. The finger is kept on the radial pulse distal to the band, the bulb is compressed and the point is determined at which the pulse just disappears. After a little practice, the error is not more than 3 mm. of mercury in children, and 10 to 15 in adults.

The observations were made at The Thomas Wilson

Sanatorium during the past summer, all determinations being recorded on graphic charts. The cases included marasmus, rickets, pneumonia and diarrhea. The normal blood pressure varies within certain limits, but in general averages about: During the first month, 50 mm.; from two to six months, 75 mm.; from six to 18 months, 75 to 95 mm.

During the third year up to 105 mm. and not over 115 mm. at any period of childhood. After a meal of five to eight ounces of milk a physiological rise of 10 to 15 mm. has often been observed. Excitement also causes a rise in pressure but in children who need stimulants such factors have little influence. It was noticed that the lowest pressure during 24 hours was between 3 and 4 A.M., confirming the generally accepted idea that this is the period of least resistance.

The object of the blood-pressure determination was to learn whether the child was getting too much stimulation or not enough. The main stimulants were whisky, strychnine (gr. $^1/_{400}$ to $^1/_{200}$) and digitalin, the latter two being given hypodermically. Response to stimulation by strychnine was indicated by a rise of 10 to 20 mm. in twenty minutes; this period being prolonged in bad cases. Digitalin caused a higher rise, often 40 mm., beginning in ten minutes and lasting sometimes three hours. Five to ten drops of whisky repeated frequently gave a steady rise in pressure and apparently had some food value as well. Strychnine and digitalin were reserved until after whisky had been tried and only so much of them used as was absolutely necessary, digitalin being tried first and followed by strychnine. Where both were needed the outlook was generally bad. In certain cases in high pressure digitalin was used and found to steady the pulse without raising the blood pressure further. Salt infusion had no effect, being surpassed in several respects by hot mustard baths.

By keeping a graphic chart the doctor was able to retire at night with a considerable feeling of security. The night nurse took the reading and gave or withheld the stimulant according to the condition of the blood pressure, and called the physician only when there was some marked indication. The morning visit of the physician and the orders for stimulation then given became much more intelligent by thus being able to consult the graphic chart. His instrument is being made by Eimer & Amend, of New York.

Some Observations on Blood-Pressure in Morbid Conditions of Adults.—Dr. Briggs said that low blood-pressure is to be seen in toxic conditions, such as typhoid, in hemorrhagic conditions and in traumatic cases. He had tried to determine the effect of stimulation and to record the result by observation, in the third type of cases. To illustrate how useful such a determination may be, in an obscure case, the case may be cited of a woman who was brought in comatose; her arteries were sclerotic, reflexes were absent, and urine was of a low specific gravity and contained albumin. Venesection was done because the blood-pressure was found to be over 350 mm. of the mercury. This lowered the pressure temporarily. At the autopsy cerebral hemorrhage was found.

(1) Alcohol. This is the most variable of the stimulants in its effect on the blood-pressure. A half or one ounce of whisky during typhoid fever will raise the blood-pressure for not more than half an hour. In a few cases alcohol gave a temporary fall of pressure. On the whole the observations seem to show that the temporary rise of pressure due to the administration of alcohol, may be due to a gastric reflex and not to any real effect on the circulation. In order to test this a typhoid patient was given tincture of capsicum and a temporary rise of pressure was observed exactly similar to that produced later in the day by an ordinary dose of whisky.

(2) Strychnine causes much more lasting effects, in doses of one-sixtieth to one-tenth of a grain. The rise in pressure is not so rapid but is more lasting and the general condition improves at the same time. When a great deal of strychnine is being given as a routine, the individual doses have little effect but this may be produced again by omitting several doses. Frequently in traumatic cases, up to one-twentieth or one-tenth grain may be given. The rise of pressure thus produced may be kept up later by smaller doses. This method is far better than to give strychnine as a routine throughout condition of low pressure. No effect was observed with strychnine (*a*) when the patient was moribund, *i.e.*, when the circulatory apparatus was breaking down; (*b*) in cases not needing stimulation; (*c*) when given as a routine, the individual doses merely maintaining the pressure.

(3) Digitalin stands midway between alcohol and strychnine. It produces a result more rapidly but its effect lasts for a shorter time. Many cases however will respond to digitalin that will not respond to strychnine. The combination is very often most effective. The only limit of the dose is that quantity which will give the best effect, and this is judged by the graphic pressure chart. It is not advised that one-fourth grain be given if one-twentieth fails, but to begin with a sufficient large dose to produce a real effect.

(4) Saline infusions have but little effect upon the pressure whether absorption be rapid or slow. An infusion given so slowly as to produce no peripheral stimulation due to the temperature of the fluid, causes no rise. If there be a hemorrhage the infusion helps to replace the fluid not to raise the pressure. The infusion produces no rise in cases of toxemia. In traumatic cases the peripheral irritation may even depress the circulation. Blood pressure is only one factor in determining the condition of a patient but it is a measurable one.

Dr. Crile said that granted that shock is exhaustion of the vasomotor center in the medulla, if both vagi and accelerans are cut and strychnine then given, there is a great rise in blood pressure but it may later fall to a lower level, and the animal into a worse condition of shock than before. The internal stimulation of the vasomotor center by strychnine and its external stimulation to trauma or operation are alike. This means that in extreme cases of pure shock we are really, by giving strychnine, causing a greater shock and weakening at the expense of the potential energy of the vasomotor center. In conditions of deepest shock I have seen no good following the use of strychnine. In such cases peripheral stimulation by adrenalin will alone raise the pressure. In one case a dog whose pressure had fallen to 30 mm. was revived with adrenalin and in another case by the use of adrenalin a headless dog was kept alive for ten hours.

(N. B.—The remarks of Dr. Briggs and those of Dr. Crile can be more readily reconciled when one remembers that the observations of the former refer to the maximum or systolic arterial pressure and took no account of the minimum or diastolic pressure. Dr. Crile's observations on the other hand, refer to the mean blood pressure.)

Dr. Cushing said that on the surgical side there has been a long-felt need of a definite knowledge of the blood pressure. Even Dr. Cook's apparatus leaves much to be desired, for physiologists have shown that this form of instrument is not entirely accurate. At Riva Rocci's clinic, blood pressure observations are made at the same time as those of the temperature and pulse. What is needed is a knowledge, not of the pressure at any one time, but of the variations in pressure.

THE MEDICAL ASSOCIATION OF THE GREATER CITY OF NEW YORK.

Stated Meeting held at the New York Academy of Medicine, December 8, 1902.

The President, Andrew H. Smith, M.D., in the Chair.

The Significance of Variations in the Internal Secretions.—The paper of the evening, on this subject, was read by Dr. Oliver T. Osborne, Professor of Materia Medica and Therapeutics in Yale University. It will appear in full in a subsequent issue of the Medical News.

Graves' Disease.—Dr. Wm. H. Thomson said that as the subject of the evening was such an extended one, he would take up only one of the well-known affections apparently connected with a ductless gland, namely, Graves' disease. His own impression was that this disease is not due to disordered secretion of the thyroid. This gland, he believed, was involved only secondarily, as the spleen was in ague. As to the diagnosis between ordinary or parenchymatous goiter, and exophthalmic goiter, while both diseases begin with enlargement of the thyroid gland, they have nothing else in common. Anatomically, at least as far as we are able to recognize, the two do not differ, but clinically they are absolutely distinct. He enumerated 24 characteristics of Graves' disease, none of which are met with in parenchymatous goiter. Among these were, extreme and persistent tachycardia, nervousness, muscular tremors, local paralysis, headache (particularly of the form of migraine), muscular pains, special affections of the senses (as deafness and tinnitus aurium), loss of the sense of smell, insomnia, and severe intestinal derangements (especially non-inflammatory diarrhea).

In the cases which he had collected he had been careful to exclude all hospital cases, as this was the most chronic of all diseases, and it was only in private practice that patients could be successfully followed up. In 28 out of 40 cases of which he had the histories, all of the symptoms which he had enumerated were met with, and the cases without goiter were on the whole the most severe. When the latter was present, it was found that the constitutional symptoms bore no relation whatever to the size of the goiter. As to the pathology of the disease, it appeared to him that for this we must look to toxins in the alimentary canal. Thus, he had known the tachycardia to be reduced by from 20 to 50 beats by a single dose of a mercurial. In any case where there is persistent tachycardia, without any inflammatory trouble, the probability is that it is one of Graves' disease. The thyroid gland is involved in only about one-half the cases. His own view was that one of the functions of the thyroid was to neutralize the poisonous materials generated in the gastro-intestinal tract, and that when these materials were in excess, a hypertrophy of the gland was liable to occur. Such hypertrophy, however, was not an essential characteristic.

Thyroid in Melancholia.—Dr. E. D. Fisher thought the various animal extracts acted in one way or another as stimulants and spoke particularly of the use of thyroid in poorly developed young children. As to the treatment of melancholia by thyroid, he said that in a hospital where this had been tried it was found that while sometimes there might be an evanescent improvement under the extract, the final results were entirely unsatisfactory. There was no pathology to this disease, he said, it was simply a mental condition. In myxedema and cretinism we knew the results.

Nutritional Disease of the Arteries.—There was a form of arterial disease, not dependent on well-recognized pathological conditions such as syphilis, Bright's disease, etc., in which anatomical changes were sometimes met with in the comparatively young. There were some changes going on (yet not endarteritis); some nutritional disease was present which made the man older than his years. In such cases we had the early breakdowns; neurasthenia or an apoplectic seizure might occur. It was in instances of this kind that he hoped that thyroid or other extract might prove successful in arresting the nutritional change. As to pituitary in the case of acromegaly, he could not say that this extract always gave results.

The Thymus and Bone Salts.—Dr. J. Leonard Corning felt that the suggestions brought forward in Dr. Osborne's paper were entirely rationally inspired, and should help on to fruitful results. That the thymus plays a part in the elaboration of the bone salts seems forcibly suggested by a comparison of the salts found with those freely distributed in the bones. The large percentage of related inorganic compounds found in the thymus tends to heighten the probability of this gland's agency in the preparation of the so-called bone salts. Moreover, the fatty degeneration and atrophy of the gland as puberty draws near, at a time when growth has already reached an advanced stage, tends still further to support the theory.

The Thyroid and Neurotic Conditions.—With regard to disturbance of the thyroid secretion as a possible source of hysterical and other neurotic derangements, he supposed that most had seen functional cases recalling in some of their features, at least, the mental and nervous disturbances of exophthalmic goiter, cases that had gone on to improvement, greater or less, under the exhibition of thyroid extract. But while this was true, there were others, differing, apparently, little, if at all, from these, that showed no such improvement. Both classes were to his mind significant. The first showed a distinct relation of cause and effect, while the second pointed to a defect rather of nosology than of theory. Then we had to consider the possible consequences of over-activity of the organ, a condition against which we should at present be able to bring little or nothing save the opiates.

The Physiological and Therapeutic Importance of the Suprarenal Glands.—The crucial observation of Brown-Séquard, in 1856, that ablation of the suprarenal glands in guinea-pigs and frogs is followed by lowering of the blood pressure and body temperature, progressive paralysis, and ultimate death, affords ample demonstration of the physiological significance of the gland. Add to this his further observation that animals so treated might by subcutaneous injections of extracts of the healthy gland be restored to a relatively normal condition, and so maintained for a considerable time, and we have the broadest kind of a hint as to the future therapeutics of the adrenal derivatives. With the improved chemistry of the drug, it has found favor with some in the management of cardiac weakness, edema of the lungs, and diabetes insipidus, not to mention hemorrhage, especially of gastric and pulmonary origin. Its hemostatic power is, indeed, one of its most significant and promising features. In view of its remarkable physiological importance, as shown by experiment, a still more extended application of the gland in the management of conditions due or largely due to circulatory insufficiency, seems altogether probable.

The Circulatory Effects of Thyroid and the Suprarenals.—Dr. Reynold W. Wilcox said that when the thyroid was ablated, death from shock might ensue. The reason for this Dr. Osborne had explained. Patients who have had this ablation done, and are fed thyroid, suffer from what may be called continued shock. Thyroid is a potent remedy, and when it is given its effects should be watched with the greatest care, as grave symptoms are liable to arise. The same is true of suprarenal extract. Not excepting the barium salts, suprarenal is the most powerful vaso-constrictor which we possess. Its first and principal action is on the arteries. Secondarily it acts as a cardiac stimulant, but this effect is not produced for some time after it has powerfully constricted the vessels. It is sometimes given in acute emergencies in heart troubles, but from what has just been said, it can readily be seen that in such emergencies it is as dangerous as digitalis.

Mammary Extract for Regulating the Menstrual Flow.—In young girls, and especially chlorotic girls, Dr. Wilcox has found no remedy which so satisfactorily regulates the menstrual flow as mammary extract. It should be given for five or six days before the expected period. In anemic girls who flow profusely it is of great service.

The Subject as Yet in Its Infancy.—Dr. Austin Flint said that a few years ago little or nothing was known concerning the physiology of the ductless glands, and what knowledge we now possess has been derived very largely from the pathologist. He had been surprised and gratified at the wide range of matters connected with variations of the internal secretions, and their therapeutic applications, discussed in the paper. He could not but feel, however, a certain amount of incredulity in regard to positive practical results, as it seemed to him that this whole subject was as yet only in its infancy.

The Effects of Removal of the Thyroid.—Prof. Graham Lusk said that out of 60 dogs in which Schiff extirpated the thyroid, 59 died within four weeks. Kocher and Reverdin found changes resulting from such extirpation which corresponded with those described by Gull in 1873, and called myxedema. The effects of removal of the thyroid are as follows: (1) Emaciation, (2) myxedematous tissue. Mucin is found in the early stages in man and in the monkey. Later there occurs a hyperplasia of connective tissue, embryonic in character. The skin is hard, rough and dry, because there is no secretion. The hair becomes thin and grey, and falls out. (3) Abdominal vaso-dilation; fatty and colloidal degeneration of the liver and kidney; hyaline degeneration of the arterial walls. (All of the above phenomena are removed after feeding thyroid). (4) Metabolism abnormally low; subnormal temperature. The heat reduction is not due to circulatory changes. (5) Nerve and muscle disturbances. Fibrillary contractions occur; in monkeys clonic cramps and tetanic spasms. These are of central origin, and due to the action on the spinal cord. There is decrease in nerve activity, as shown in motor paralysis and anesthesia. The face loses its expression because the innervation of the muscles is interfered with. There are psychical disturbances, due to the action on the cerebral cortex; mental weakness, irritability, stupidity. (6) The pulse is unchanged in myxedema. If thyroid extract is fed, the pressure is lowered and arterial relaxation occurs. (7) Diuresis is produced.

SECTION ON CLINICAL MEDICINE AND SURGERY; MEDICO-CHIRURGICAL FACULTY OF MARYLAND.

Twelfth and Thirteenth Regular Meetings, held November 21 and December 5, 1902.

Two Cases of Brain Tumor with Report of the Eye Symptoms.—Drs. Chambers and H. Friedenwald reported these cases. The first patient was a female, thirty-five years old, with a history of syphilis 12 years ago. Six months before admission to the City Hospital in June, she commenced to have nausea and vomiting with dizziness and intense headache. Her sight had also been failing during this time. On examination she was found to have double choked disc and hemiopia on the right side. The field of vision was reduced. With the right eye she could count fingers at 2½ feet; with the left at 3½ feet. There was a sensitive area in the left occipital region. The diagnosis was made of tumor, possibly syphilitic, of the left occipital lobe, and mercury and the iodides were accordingly prescribed. No improvement was seen at the end of a month and the patient begged for further treatment. Her intelligence was fairly good at first, but grew progressively worse, so that on the day of operation it was hard to demonstrate the hemiopia. On June 22 Dr. Chambers operated and found a tumor too large for removal. He therefore drained off a large amount of cerebro-spinal fluid. In 24 hours there was great improvement. Intelligence returned and the patient became quite cheerful. The optic neuritis was also diminished. The patient lived until July 25 and suffered no pain during the four weeks after the operation. Before death intracranial pressure increased and caused a nystagmus. There was also right facial paralysis and herpes labialis. The patient died in delirium. The interesting feature of the case is not in the diagnosis nor in the operative procedure but in the microscopical appearance to be described.

The second patient was a male, whose mother, and others of his kindred, had been insane. Five years ago he was troubled with asthenopia and with myopic astigmatism. This was corrected, as was also a marked weakness of accommodation. The patient was very neurotic and was thrown into violent delirium by atropine. His vision was $^6/_8$ or less, never perfect and could not be corrected.

In March, 1902, he had severe pains in his right eye, which could not be explained. Sodium salicylate caused some improvement, but after a month the pains recurred and were accompanied by headache. After a trip to the country his vision was reduced to $^6/_{12}$ and $^6/_{15}$ and he had a typical form of hysterical amblyopia. The fields of vision were reduced to 10° and 15°. The color fields were also reduced. There was definite right optic neuritis, but the left optic nerve was normal and remained so. There was also corneal and facial anesthesia on the right side and the patient said he was anesthetic on the right side of his body. The ocular movements were good but the right eyelid closed only partly in blinking. The marked hysteria and an unilateral optic neuritis suggested orbital disease. This view was confirmed by the presence of orbital pain. However, the optic neuritis (right) steadily increased, paralysis of the right rectus came on, and all the other symptoms progressed till the patient's death, on September 15. The features in the case are (1) association of marked hysteria and hysterical vision with a cerebral tumor, (2) unilateral optic neuritis. Although such cases are reported, they are very rare and usually suggest orbital disease. The explanation is difficult. The neuritis was not of a high degree, but is merely a mild choked disc.

Dr. Chambers saw the first patient on June 22, when she had a very definite tender point in the occipital region. The skull was opened by a large horse-shoe flap. The dura was not adherent to the bone, although it was thick and adherent to the pia. The large, soft tumor mass lay directly below it. He saw the second patient in March, 1902, when he complained of pain in the legs, along both sciatic nerves. He probably had syphilis. The knee-reflexes were increased and there was no ankle clonus.

Exhibition of Specimens from the Above Cases.—Dr. McCleary exhibited these. *Case 1.*—The dura was adherent and there was a slight leptomeningitis; no evidence of syphilis was seen. The tumor was an eroding, fungating mass, which perforated and spread out over the dura, and extended 5 cm. below the dura pressing on the middle occipital convolution of the brain, causing a cup-like depression therein. The pia was everywhere present between the tumor and the brain. There was much hemorrhage. Sections showed that the dura was not involved. On the surface of the tumor there were a few spicules of bone, and at the edges a good many giant cells arranged in a gridiron pattern, a result of irritation by the gauze drain, which was left in 10 days. The tumor is an endothelioma, originating in the endothelium of the subarachnoid spaces, the pia being quite free.

Case 2.—The second specimen is a pedunculated tumor, found at the base of the brain on the ventral surface of the pons, evidently starting from the pia. It was not adherent to the dura. The tumor, which measures 12.5 by 10.5 cm., caused a depression 3.5 by 1.5 cm. in the right side of the pons, displacing the anterior lobe of the cerebellum and extending on the middle cerebellar peduncle. The medulla was also displaced and there was pressure on the temporo-sphenoidal lobe. The tumor had a lamellated appearance. Microscopically it shows a connective tissue framework, containing endothelial cells in rows. It was probably an alveolar endothelial tumor of meningeal origin.

Dr. Deetjen exhibited four radiographs, made on two different occasions from the second case, and in each of these a triangular shadow was definitely made out at the point where the tumor was found.

Dr. F. X. Dercum of Philadelphia in opening the discussion said that when he saw the second of the above cases he presented the following symptom-complex: Headache, dizziness, epileptiform seizures, once with unconsciousness, pains in the thighs, especially over their anterior portions. Symptoms of coordination, more marked on the right. The right side was weaker. There was right-sided facial paresis, involving all the branches of the seventh nerve. The palpebral fissure was larger on the right, hypesthesia in the region of the superior and middle branches of the fifth nerve, hypesthesia of the right arm in its posterior and upper aspects, unilateral optic neuritis, paralysis of the external rectus, absence of Babinski's reflexes, exaggeration of the knee reflexes, the others being normal. Later on, taste was impaired on one side and there was indefinite hemianosmia. The interesting features of the case are extensive involvements of the cranial nerves.

He briefly reported four somewhat similar cases. The first was a female forty-one years old with headache, vomiting, dizziness, seizures, ataxia in the hands and arms, optic neuritis, especially on the right, lateral nystagmus, dilatation of the right pupil, paralysis of the superior and external recti, central deafness on the right, hypesthesia in the region of the middle and inferior branches of the right fifth nerve, Babinski's sign and the supra-orbital reflexes absent.

The second case was a male, twenty-six years, who had headache and vomiting, and had had one seizure. There was slight ataxia of the right extremities, optic neuritis in the left eye and to a slight degree in the right, contraction of the visual fields, paralysis of the right external rectus, hypesthesia in the middle and superior branches of the left fifth nerve, hypesthesia of portions of the right lower extremities, both localized and diffuse, paresis of the left side of the face, knee kicks normal or absent.

The third case was that of a male, twenty-nine years old, with headache, vomiting, dizziness, seizures, ataxia, weakness on the right side, double optic neuritis, nystagmus, hypesthesia of the superior and middle branches of the left fifth nerve, hypesthesia of part of the right lower extremity, the side opposite to that on which sensation was impaired in the face.

The fourth case was a female of fifty-one years, with headache, vomiting, seizures, ataxia, weakness on the right side, paresis of the right side of the face, hypesthesia of the right fifth nerve, especially in the mouth, transient hemianosmia, transient loss of taste and smell on the right side, no optic neuritis, contraction of visual fields, nystagmus and conjugate deviation to the right, right central deafness, absence of Babinski's and supraorbital reflexes.

The second case was operated on by Dr. Keen recently. The skull was opened in the temporal region and the brain protruded excessively. It was incised and an intra-cerebral growth was found, extending downward and backward.

The fourth case was also operated on, a tumor, evidently of the pons, could be seen and felt, but could not be removed.

The ataxia and nystagmus must be due to pressure on the middle and superior cerebellar peduncles. The hemianosmia and hemianesthesia were due to differences in pressure. In Case I the voice became impaired on leaning forward. There was no twitching of the facial muscles in any case and weakness of the muscles of mastication was present in only one case. In two of my cases there was crossed hypesthesia of the lower extremities, due to the direction of the pressure. In the cases reported by Dr. Friedenwald the hypesthesia of the leg and face was on the same side.

To summarize the four cases, in addition to the usual headache, nausea, dizziness and seizures, there was ataxia in all the cases; hypesthesia in all; facial paresis in all; optic neuritis in all, three times unilateral; the vision was affected in all; there were ocular pareses in two; nystagmus in four; hypesthesia of the face in four, of the extremities in three; impairment of taste and smell in two. Knee reflexes exaggerated in two, diminished in one, varying in two. Central deafness in one, impairment of hearing in three.

The second tumor described by Drs. Chambers and Friedenwald explains the findings in the case exactly. In one of his cases the radiograph was successful. This is the one on which Dr. Keen operated. The shadow was situated like that in Dr. Deetjen's. The prognosis is bad, even with operative treatment, but the surgeon can now reach all parts of the cranium. In one case which he saw, Dr. Keen chiseled the temporal bone and put his finger into the foramen magnum.

Dr. Preston said that he saw the second case early in July, 1901. The eye-grounds were normal at that time. There was slight right-sided anesthesia, and slight mental and hysterical symptoms. The diagnosis lay between hysteria and brain tumor, although he was inclined to the former. In a case which occurred at the City Hospital five years ago, there was headache, a tendency to fall to the right, nausea and vomiting, slight mental symptoms, and hypesthesia of the fifth nerve. The diagnosis was made of ataxia and the involvement of the fifth nerve, of a tumor pressing on the cerebellar peduncles, the pons and the exit of the third nerve. The postmortem confirmed the diagnosis.

It seemed to him that operations are only justifiable (1) if there be localizing symptoms (2) for relief of pain and improvement of eyesight.

Dr. H. M. Thomas said that the unilateral optic neuritis which is so difficult to explain, usually, other things being equal, points to the presence of a tumor on the same side. He asked Dr. Dercum to explain the sensory disturbances on the same side as that of the tumor. In patients under his care who had double optic neuritis and central deafness, it would have been a great comfort if we could have relieved at least the blindness. He would like to see an operation devised for the relief of intracranial pressure, but avoiding the hernia cerebri, which has been present in so many of his cases.

Dr. Cushing said that multiple paralyses of the cranial nerves are not uncommon (See Bastian, *British Medical Journal*, 1893). In one of his cases there was paralysis of the third, fourth, fifth, seventh, eighth and twelfth nerves on the right, as well as of all the muscles controlled by the fifth on the right side. Diagnosis was made of a tumor near the Gasserian ganglion. The growth was found at operation and easily removed. Two weeks later the lower part of the tumor was removed. The pain is again returning in the face and the patient is blind in one eye.

There are two groups of symptoms in cases of brain tumor (*a*) the great triad, (*b*) the localizing superstructure of symptoms. Dr. Fitz has recently said that mere prolongation of life by surgical intervention is not justifiable, unless there be relief of symptoms. In the first case reported by Dr. Friedenwald there was certainly an advantage in operation. If there be no localizing symptoms, operation may still be justifiable, the opening being made preferably in the cerebellar region, because death is most often due to pressure on the medulla and will be less likely to occur if the opening is in that vicinity. The operation should be undertaken to free the patient from his symptoms. Wound may be closed without drainage. Sänger of Hamburg reports a large number of cases from neurological standpoint and advocates palliative operations.

Dr. Dercum said, in conclusion, that of the cases which were operated on and in which no tumor was found, some were relieved and others, perhaps a larger number, went from bad to worse. Further, that the contraction of the visual field was probably not a hysterical manifestation, but due to pressure on the second nerve.

Portions of Stomach Tube Removed by Gastrotomy.—Dr. Julius Friedenwald showed portions of two tubes removed by operation from one patient by Dr. Finney and from another by Dr. Harris. No previous cases have been found on record in which fragments of tube were thus removed from the stomach. In one case reported by Leube, the tube had been swallowed and could be palpated in the stomach. It caused considerable fever and was suddenly vomited up one day, the patient feeling something in the throat and being able to grasp it with the fingers.

Dr. Finney remarked that he had done gastrotomy for foreign bodies four times, twice for peach stones lodged low in the esophagus and once for false teeth, in addition to the present instance. All the cases recovered promptly except in one of those in which a peach stone had been swallowed and where there developed a mediastinal abscess, it being impossible to say whether the abscess was due to the stone or to the effort to remove it. The abscess was readily drained by resection of a rib. The operation is practically without mortality.

Orthostatic Albuminuria with the Report of a Case.—Dr. Beck reported a case of a male, twenty-five years old, a cigarmaker, of a nervous and weak constitution. His father died of apoplexy. The patient has had diphtheria and nervous dyspepsia. For the past five years his work has kept him indoors. Alcohol and tobacco are used moderately. No history of syphilis. The patient is a sexual neurasthenic and has had a good deal of vertigo and palpitation. On being examined for life insurance, albumin was found in his urine and he was treated for seven months without benefit.

When first seen on May 15 his weight was 137 pounds, he was pale, of a sallow complexion and quite nervous. The chest and abdomen presented nothing abnormal but the patient had symptoms of hyperacidity and constipation. Examination of the nervous system showed that his sensations were impaired. There was paresthesia in the lower abdomen and legs and the tendon reflexes were diminished. Red blood count was 4,000,000. Urination was accompanied by burning and the urine, of which two liters were passed in 24 hours, had a specific gravity of 1.030, contained 0.7 per cent. albumin and a few hyaline casts and pus cells. This was after moderate exercise. On the following day two specimens were examined. The morning specimen was free from albumin. The evening specimen, examined after the patient had been standing half an hour, contained 0.1 per cent. of albumin. After sitting for two hours the urine was again free from albumin. The same result was obtained on repeated examination of specimens. Outdoor life was prescribed under restricted proteid diet. He was also given tincture of nux vomica and syr. hypophosph. comp. After a month there was decided gain in the patient's general condition, but after standing an hour there was still 0.1 per cent. of albumin present. Hot and cold sponges and douches were now added to the treatment.

One month later the patient complained of fulness in the epigastrium. A test meal showed a total acidity of 80. The gastric distress was relieved by lavage. The patient has recently been seen and is practically cured of his trouble.

Of the 36 specimens of his urine examined, the average specific gravity was 1.026. The urea averaged 2.45 per cent. Albumin was present in twelve of the specimens.

In a recent Paris thesis, by Dr. Walter Vire, this form of albuminuria, due to standing, is fully discussed. It occurs in young people without renal disease and was discovered by accident. No functional disorder could cause it. The prognosis is good. It is evidently due to fluctuation in the circulation of the kidney, probably to a vasomotor disturbance of the renal circulation. It is usually seen in nervous persons.

Dr. Osler said that the reciprocal relations of neurasthenia and albuminuria are interesting. Transient albuminuria is frequently present in neurasthenics and neurasthenia is often a consequence of albuminuria. In one case in this city, five minutes in an erect posture causes a trace of albumin in the urine. Even to sit up and eat breakfast in bed would cause the albumin to appear. We lay far too much stress on the mere presence of albumin in the urine when we should pay attention to the casts, the specific gravity, the state of the arteries and the pulse.

Dr. Pancoast said that a series of cases of postural albuminuria was recently published by the late Dr. Hugee in which he showed that the renal circulation was fluctuating in certain cases. In Dr. Beck's case, albumin disappeared on sitting down and its presence was therefore evidently not altogether due to posture.

The Surgical Treatment of Facial Paralysis by Nerve Anastomoses.—Dr. Cushing said that no injury of peripheral nerves is as distressing as that of the seventh cranial. It was known long ago that anastomoses could be made between nerves of similar character. Even the sympathetic and vagus have been anastomosed and the peripheral portion of the vagus has taken up the peripheral work of the sympathetic. In 1898 Dr. Foa, at the suggestion of his assistant attempted to suture the spinal accessory into the peripheral portion of the facial nerve, but was unsuccessful. Ciarelli, an Italian surgeon, did the same thing. Kennedy, in England, in a case of facial ataxia, divided the seventh nerve and sutured to it part of the eleventh. The patient made a good recovery.

The present case is a male, sent from Elkton with a gun-shot wound in the mastoid process. The inner ear was destroyed. The blood was removed from the base of the skull. Six weeks after the injury an incision was made along the anterior border of the sterno-mastoid, the muscle was retracted, the eleventh nerve was divided, turned upward and sutured into the peripheral end of the divided seventh nerve. Recovery was rapid and the patient first found that he could work his facial muscles by elevating his shoulder. He can now work them freely, independent of the shoulder, can close his eyes, and coordinate fairly well, although it is not easy to understand how he does this. If the cell-bodies of the nerves atrophy when their peripheral portions are destroyed, then the central portion of the seventh should have atrophied. The impulses probably travel, however, by commissural fibers passing between the centers of the seventh and eleventh nerves, thus bringing about coordination. The chief points to be observed in the technic of the operation is to avoid the handling of the nerves and avoid scar tissue. In proportion as scar tissue is avoided, the result is improved.

Tuberculous Pericarditis.—Dr. Thayer reported a case of a male, thirty years old, a painter. Four months ago he had pleurisy without effusion on the left side, with pain and dyspnea. Two weeks ago he had pain in front of his chest, became faint and could not work. His dyspnea increased and there was slight swelling of the feet. The pulse is small and irregular. The precordium is bulging, dulness extending from the right nipple to the left axilla. There is also a large area of flatness. The left lung is tympanitic throughout; there are a few râles at the apex. The heart sounds are distant, nothing is heard below the fifth rib. Aspiration was done, the needle being inserted two to three cm. inside the nipple line, and 1,250 cc. of fluid came out under pressure. During the tapping dyspnea disappeared, cardiac flatness returned to normal but the triangular area of dulness remained. This was the condition on October 31. When seen two weeks ago the patient's apex impulse was distinctly visible and there was no Broadbent's sign. The features of the case are (1) the amount of the effusion, (2) the rapid recovery.

In one of his cases, 900 cc. were removed at each of two aspirations and later 4,000 cc. at the autopsy. In making the diagnosis Rotch's sign is to be noted, *i.e.*, the flatness to the right of the sternum in the fifth interspace. Ewart's sign depends on the relative cardiac dulness and consists in a change in the angle between the heart and the liver, the usual acute angle becoming obtuse. There is but little danger of perforating the heart during aspiration. This has only been reported twice. If pus be present, incision and drainage must be done.

Dr. Osler said in a large number of cases which came to autopsy it was seen that the greatest bulging in pericarditis was in the left costo-xiphoid angle. In one of his patients, a colored male, aspiration was done three times and tubercle bacilli were found in the fluid.

Dr. N. B. Foster briefly reviewed the 18 cases which had come to autopsy at the Johns Hopkins Hospital. Thirteen of these were adults between fifty and eighty years of age. Infection almost always occurred by contiguity with the lungs and pleuræ or the bronchial glands. There was frequent association with Pott's disease.

NORTH BRANCH OF THE PHILADELPHIA COUNTY MEDICAL SOCIETY.

Stated Meeting, December 8, 1902.

Dr. H. Brooker Mills, in the Chair.

Dr. George G. Ross read a paper entitled "Some Experiences with the X-ray as a Therapeutic Agent." This paper will appear in a subsequent issue of the Medical News.

Dr. William S. Newcomet presented three cases which had been treated by the X-rays. The first was an extensive epithelioma of the orbit and had been healed for about nine months; the patient's eye was gone and considerable bone had been lost from the frontal and nasal bones, and this case he felt was an illustration that some of the cases of malignant disease would heal under this treatment, even after there had been extensive necrosis. The other two cases were carcinomas of the breast, both inoperable, and have been doing well under treatment. In regard to the hazard, of this form of treatment, he rather felt that it had been overdrawn, and believed that the remedy, if properly managed, would afford a very efficient mode of relief, even in those cases where a cure could not be expected. In a series of 24 cases, he had attained the following results: Epitheliomas, surface, 4 cured; breast carcinomas, 2 cured; breast carcinomas, decided improvement in 2; epitheliomas, surface, decided improvement in 1; epithelioma of the uterus, pain controlled and apparent improvement in 2; recurrent sarcoma, pain controlled and apparent improvement in 1; carcinomas of the breast, pain controlled and apparent improvement in 2; doubtful effect in 4; no effect in 6.

In the last two groups were included people who left while under treatment; one died about two weeks after he commenced treatment. No selection was made of cases, and all that came under the notice of the speaker were treated. Improvement in the uterine cases and breast cases was due to the control of the hemorrhage, and he stated that when the breast case which he had just presented came under treatment she was very weak, with a pulse of about 130 to 140 and with a temperature of from 99° to 101° F. The uterine cases were exposed both in the knee-chest position and through the abdomen. In regard to osteosarcomas, he stated that he had seen two cases, neither of which improved.

In regard to the effect of the X-ray he felt that its effect upon a malignant process might be likened to a given force upon a well-organized army and a mob. The X-ray will do great harm to the healthy parts, but the resistance of the healthy cell is greater, through its nerve and blood supply than the growth, therefore, the disorganized mass must undergo degeneration before the surrounding healthy structures.

X-ray in Epithelioma.—Dr. Jay F. Schamberg stated that it was principally in the epithelioma of the skin that the X-ray had been employed in dermatology. The majority of the cases of benign disease of the skin, he felt did not usually tend to large tissue destruction, involve but a small space, do not lead to mediastasis, and can generally be cured by the application of arsenic paste and similar remedies. He felt that it was particularly valuable in cases of deep rodent ulcer, which frequently involves such regions, as the nose, eyelids and orbit, in tuberculous conditions of the skin, lupus and other affections which have a tendency to long persistence and ultimate ulceration. In carcinoma it possesses advantages over all other remedies in that it does not sacrifice the healthy skin and is painless. It is a minor procedure as compared with radical operation and for this reason it can often be employed in timid patients, or in regions where surgical relief would be impossible. Recurrences have occurred in about 50 per cent. of these cases which had been observed, and the same treatment was then administered as in the primary attack.

For the removal of excessive hair growths good results have been secured, and one German observer claims to have treated 44 cases, which were permanently cured, but these results have not been borne out by other observers, and one case is reported by two French observers, where the absence of hair removed from a guinea-pig in this manner lasted eighteen months and then returned.

The use of the X-ray for the removal of birthmarks was referred to and the case was reported of a man aged twenty-two years, suffering from a naevus angiotosis, involving the entire left side of the face, in which the application of the X-ray was followed by severe dermatitis, loss of the epidermis and pustulation. It left practically no scar and at the end was almost indistinguishable. In the treatment of eczema, acne and psoriasis favorable results have been reported, although Pusey of Chicago states that recurrences are frequent where the seat of the disease is a hair follicle or sweat gland.

In the matter of the therapeutic value of this remedy he felt that it was still in an experimental stage and that there were undoubtedly a great many cases which terminated unfavorably which were not reported. Its use is not unattended by danger and even with the greatest care in regulating the distance of the patient and the character of the application, dermatitis and sloughing will sometimes result.

Dr. William M. Sweet stated that most of the cases in which he had employed the X-rays had been cases of epithelioma around the face, particularly around the eyelids. The first ten applications he usually administers daily, after that reduces them to once a week or more according to circumstances. A case of epithelioma of the eye, which extended across the nose and into the orbit occurring in a lady thirty-three years of age, was reported, in which, under treatment by the X-ray, the internal form of the disease entirely disappeared, although there were still some present in the orbit. Another case referred to was that of a man in which the epithelioma extended over the entire side of the face. The disease was of fifteen years' duration, and after 2½ months' treatment contracted one-half. In the more extensive epitheliomas of the orbit, it was observed that after the treatment had been administered for some time that there was an extensive leucocytosis present, and he believed that the application of the X-rays produces atrophic changes in the cells. In the treatment of conditions involving the face, the X-rays present that advantage that they can be administered in regions surgically inaccessible, they do not leave much of a scar and if the case recurs they can be again employed.

Dr. G. E. Pfahler stated that he had treated in all about fifty cases of malignant growths by means of the X-ray, consisting of carcinomata of the skin, carcinomata of different parts of the body, including the uterus, tuberculosis of the skin and psoriasis, and in all cases beneficial results had been secured. He reported one case of carcinoma of the uterus which was exposed both through the vagina and through the abdomen, in which the woman recovered sufficiently to be able to scrub around the wards of the hospital, and he believed would have been entirely cured had she continued under treatment. In another case of carcinoma of the uterus, the case was apparently cured, but died a short time later, and necropsy revealed an enlarged gland in the axilla. In the treatment of the uterine carcinoma he had carefully protected the surrounding parts, and he felt that this case clearly portrayed the necessity for the treatment of the surrounding glands. In cases of large tumor of the breast or very extensive tumor of the uterus, he felt that it would be better to remove the major portion of the growth by surgical means and then follow this up by the X-ray treatment, and in all cases, he recommended a few applications of the X-ray prior to surgical intervention. In the treatment of the deeper carcinomata, he felt that the carrying off of the degenerated cells through the system might tend to produce toxemia and account for some of the cases of septicemia following these conditions, but he felt that this danger was more than counterbalanced by the relief afforded.

Dr. Mihran K. Kassabian recommended the protection of the healthy tissue by a lead sheet during the operation, the hole in which should, however, be somewhat larger than the diseased area in order that the surrounding tissue may be treated. The exposure he thought should be given every day for about six or seven minutes during the first week, the next two weeks the length of each treatment should be somewhat decreased and during the following week it should be discontinued in order to observe the effect produced. The production of dermatitis he felt was unnecessary, as he believed that resulted from too constant and too strong an application of the rays. In cancer of the deeper structures he felt that introduction by means of a vaginal tube was unnecessary and in many cases he administers the X-rays without the removal of the clothing. He reported a case of carcinoma in which the pain had entirely disappeared after two weeks' treatment.

Physiological Action of X-rays.—Dr. Charles Lester Leonard directed his remarks to the physiological action of the X-rays, and stated that it had been proven that actual degenerative changes take place under the influence of this agent, the action seeming to be of a neurotrophic character. Pathological examinations have revealed the fact that the X-rays produce an analgesic action, in addition to which there is an alterative effect, fatty degeneration and metamorphosis. The various steps he believed to be: first, a degeneration, producing a certain amount of deterioration which is followed by sloughing, breaking down and liquefaction, and herein lies the danger in producing too sudden and too marked a change where the growth is located in the deeper structures which cannot be adequately drained, the tissues being at first stimulated, but later becoming devitalized under the influence of the toxic substances? Three cases were reported, the first a case of scirrhus, which was so completely cured that it was almost impossible to detect the presence of malignant tissue; the second was replaced by healthy tissue; the third was a case of cancer seven inches in diameter, which under this treatment decreased over two inches in size.

Dr. John B. Shober referred to the importance of the preservation of accurate records and careful comparison of cases by the various workers in this line, and suggested as an appropriate method of recording the cases, the making of plaster of Paris casts and photographs of the growth, prior to and at intervals during the treatment. Where the cancer occurs low down in the uterus or cervix, he believed that good results should be obtained by the administration of the rays through the vagina by means of a tube or speculum.

Dr. W. Duffield Robinson referred to the case of a man suffering from eczema of the forehead and elbow of several years' duration, the spot on the elbow measuring about 2¼ x 3½ inches. The use of the X-ray was commenced, the first treatment being given for about six minutes with the tube at the distance of about six inches, and at the end of a week had apparently produced no effect, when a similar treatment was given, which was followed at the end of the second week by a marked dermatitis and sloughing extending about 1½ inches around each spot, which condition of the forehead subsided in about three weeks, at which time the eczema was gone and has continued absent ever since, a period of about two years. The inflammatory condition of the arm continued, increasing rapidly in size and, although local treatment was employed, became so bad that amputation was advised but the condition finally yielded to local treatment.

Dr. A. G. Ellis stated that he had made pathological observations in four cases and in none of them had there been a tendency to leucocytosis nor a collection of polymorphic leucocytes. In some there was a small area of lymphocytosis, probably one-half of the number after the exposure that there was before. In a case of carcinoma of the breast, about the size of an egg, the rays were applied through a lead sheet with a hole like a half moon, about one-half of the size of the growth. After four applications of ten minutes each, the tumor was noticed to be decidedly spongy at the seat of the application, and after eight exposures the whole tumor, as well as some of the axillary glands were removed. Examination showed a small tumor, about one-half an inch in the smallest diameter, containing a small amount of fluid resembling serous pus, in which was floating a number of large cells almost entirely filled with fat. The surrounding tissue was very fat with some evidence of necrosis. Subsequently the granular change became more marked, and the nuclei became less, although examination of the surrounding areas showed it to be a typical scirrhus. In the other cases observed similar results were noted.

Dr. George G. Ross, in closing, referred to a case reported by Dr. Coley of New York, which had recurred six times following operation, and which was entirely cured by the X-ray. In regard to osteosarcoma, while he did not believe the rays had any effect on the progress of the growth or the ultimate outcome of the disease, he felt that the relief from pain afforded by their use was sufficient to justify their continued application.

The "Proper Recognition of Electrotherapeutics" was the title of a paper read by Dr. A. E. Rainear, in which he referred to the great progress made in this direction during the last decade, and especially to the work of Professor Roentgen. Where electricity was formerly empyrically employed, its use is now based upon certain well-known laws and principles. The use of cataphoresis and electrolysis in the treatment of abnormal growths, and of the X-ray as a diagnostic assistant were commented upon, and the writer believed that the greater percentage of neurotic and neuro-muscular ailments could be cured by these agents, and that there was a wide field in gynecology for its employment. Regret was expressed at the small attention that has been paid to this subject in the curriculum of the average medical school as it was believed that in order to secure favorable results, the electrotherapist must be thoroughly trained in this line of work.

Dr. G. Betton Massey felt that too little attention was devoted to electrotherapy at the present time, and believed that their use should be increased particularly in gynecology. He urged the general practitioners to perfect themselves in the knowledge of the galvanic and faradic currents, and stated that he felt better and quicker results in the treatment of malignant growths could be obtained by the employment of cataphoresis than by the X-ray. The recent advances that had been made by Finsen and others in the therapy of light were also of great moment and should be energetically followed up and careful records made of all obstinate and chronic cases.

BOOK REVIEWS.

Diseases of the Rectum and Anus. Designed for Students and Practitioners of Medicine. By Samuel Goodwin Gant, M.D., LL.D., Professor of Rectal and Anal Surgery at the New York Post-Graduate Medical School and Hospital, etc. Second Edition. F. A. Davis Company, Philadelphia.

The second edition of this work contains so many additions to the previous volume, and several of the chapters have been so entirely rewritten and extended on account of the advances which have been made in the domain of rectal surgery that the present volume may be considered practically a new work. Among the additional subjects treated upon may be mentioned, "Diseases, Injuries and Tumors of the Coccy;" "Venereal Diseases of the Ano-rectal Region;" and "Recto-colonic Enteroliths and Concretions." Special attention should be called to the numerous new and original illustrations which elucidate the text most admirably and which alone make it a valuable treatise for one to whom the diagnosis and the details of treatment are important subjects. The chapter on "Auto-intoxication and Auto-infection" does not perhaps express the latest views upon the chemical processes which underlie these conditions and upon which so much work has recently been done by the physiologic chemists but it does at least call attention to the importance of this subject which lies perhaps more within the domain of the physician than the surgeon. A chapter on "Railroading as an Etiological Factor in Rectal Diseases," is both interesting and useful and serves to completely cover the subject of the volume from every standpoint.

Biochemisches Centralblatt. Vollständiges Sammelorgan für die Grenzgebiete der Medicin und Chemie, unter Leitung von P. Ehlich, E. Fischer, A. Kossel, O. Liebreich, F. Müller, B. Proskauer, E. Salkowski und N. Zuntz, herausgegeben von Dr. phil. et med. Carl Oppenheimer. Verlag von Gebrüder Bornträger, Berlin. Bd. 1, No. 1, Dec. 15, 1902.

The array of distinguished names that greets the reader on glancing at the title-page of this new *Centralblatt,* is not the least important feature of this latest addition to the periodical literature of scientific research. The various forms of the *Centralblatt* covering the domains of Physiology, Medicine, Pediatrics, etc., fill an urgent want; they afford a bird's-eye view of the entire literature of their respective subjects. The *Biochemisches Centralblatt* is the youngest member of this important series. It covers the broad domain of the chemical investigation of vital phenomena. The subject-matter includes the following: Selected reports of practical value to medicine from pure, physical and applied chemistry and from plant-physiology; physiological chemistry in the restricted sense (the bodily constituents and their derivatives); chemistry of the tissues and organs under normal and pathological conditions; histological chemistry, including that of staining agents; the chemistry of digestion secretion and excretion, of metabolism and of the blood; ferments and fermentative processes and non-bacterial toxins; the chemistry of the pathogenic micro-organisms (toxins, antitoxins), the phenomena of immunity; toxicology and pharmacology, hygienic chemistry, disinfection and water-analysis.

The above enumeration of the multitude of subjects with which chemistry is vitally concerned, can not fail to impress one with the eminent value of a periodical like this. The growing importance of chemistry in all the branches of practical medicine is realized more and more as one wishes to reduce the art of healing to a rational basis. The newly-developed physical chemistry and the study of the ferments, are throwing floods of light upon many obscure physiological problems. As an example of the trend of modern investigation in biochemistry it will suffice to mention a few topics abstracted in the initial number of this new periodical. The constitution of the proteid molecule is still engaging the attention of many physiological chemists. Thus E. Fischer and E. Abderhalden, in the study of the hydrolysis of oxyhemoglobin find that a-pyrrolidin carbonic acid, alanin and phenylalanin are regular constituents of the proteid molecule. This subject is also approached by E. P. Pick from the standpoint of the split-products of the peptic digestion of fibrin; he finds that thioalbumose is the carrier of the cystin group, glycoalbumose of the carbohydrate group, while albumose bIII, peptomelanin and protoalbumose are distinguished by their rich content in aromatic bodies. A. Gautier has found arsenic normally in the thyroid gland as well as in the thymus, the skin and its adnexa. A. Oswald shows that the iodine content of goiters is extremely variable, sometimes greater than in the normal gland, sometimes less; the amount of colloid and that of iodine rise and fall in a corresponding ratio. Another subject of absorbing interest is that of the melanins. Lodz Helman found that in the majority of melanotic tumors investigated, glycogen could not be detected.

In conclusion, there is no doubt that the success of the *Biochemisches Centralblatt* is assured. He who would keep abreast of the enormous literature of biological chemistry will find this an invaluable guide.

A Nurse's Guide for the Operating Room. By Nicholas Senn, M.D., PhD., LL.D., C.M., Professor of Surgery, Rush Medical College, in Affiliation with the University of Chicago; Attending Surgeon to the Presbyterian Hospital; Surgeon-in-Chief St. Joseph's Hospital, etc. W. T. Keener & Co., Chicago, Ill.

This is an admirable little volume subserving exactly the purposes for which it is intended. The author's characteristic conciseness and clearness of expression are well shown throughout its pages and the somewhat difficult mean between too much and too little in a book intended, as this is, for nurses has been carefully preserved. The topics discussed cover such important subjects as the preparation of an operating room in a private house; the preparation of the patient for major and minor operations; anesthesia, general, local and spinal; intravenous infusion; drainage; sterilization and disinfection of the hands, instruments and suture material; metric data and the preparation of the solutions used in surgery; the preparation of dressing materials, the after-treatment of laparotomy patients; shock, hemorrhage and peritonitis, etc. All of the common operations are then taken up seriatim and a list of the instruments, dressings, etc., required for each is given in tabular form. Nearly all instruments mentioned are figured so that familiarity with their names may be acquired. Although of course such lists are apt to require modification to bring them into accord with the methods of any particular operator, still very little fault can be found with those here given. The author's wide experience not only in hospital but also in emergency and military surgery has taught him many practical points which he has embodied in this manual and which make its perusal well worth the while of any one having to do with surgical work.

Few sins of omission are to be noted, though inasmuch as directions for the preparations to be made for the application of a Sayre's jacket and Senn's fixation splint are given it seems strange that a few more words on the application of plaster bandages in general and such common dressings as Buck's extension are not added. The addition of sodium carbonate to the water in which silkworm gut is boiled, as recommended on page 42, is not advisable as it tends to cause the material to swell. Such are but minor points, however, and as a whole the little volume deserves a wide popularity.

Die Röntgenstrahlen im Dienste der Chirurgie. Von Dr. Carl Beck, Professor der Chirurgie, New York. Verlagsbuchhandlung Seitz & Schauer. München.

The eminence of the author in the field of surgery indicated by the title of his work and the very numerous contributions he has already made to the literature of the subject lead us to consider the present volume with more than usual interest. Even a cursory examination is sufficient to show its importance and value and the results of the ripe experience it embodies render its perusal almost indispensable to any one working along similar lines. Added to the intrinsic value of the letter press is the sparkling, almost epigrammatic, brilliancy of the author's style which lends a charm to his writings possessed by but few professional dissertations.

The work is divided into two volumes and three sections. The first volume contains, first, a general section in which the significance of the Röntgen ray, the apparatus needed and the technic of its application are considered. This is the one disappointing portion of the book and a fuller exposition of the technical details of which the author is master would no doubt be appreciated by many readers. In spite of the numerous later types on the market the author still prefers the Edison transformer, while water-cooler tubes are said to be open to the objection of a greater tendency to produce dermatitis. The term "radiograph" is considered a solecism and not to be employed in place of "skiagraph."

The second section of the volume takes up the body, region by region, and describes the conditions susceptible of diagnosis or treatment by the rays and is masterly in matter and manner. The second volume is a portfolio holding sixty odd reproductions of skiagraphs which for the most part are above praise. A few are somewhat lacking in clearness but altogether they form a most instructive collection and bear eloquent testimony both to the author's technical skill and his wealth of clinical material.

In closing it may be permitted to make two slight criticisms, one that the tone of the author's writing makes the treatment of fractures, given the Röntgen ray, seem mere child's play, and the other that the addition of an index would have added greatly to the value of the book.

The Treatment of Fractures. By Charles Locke Scudder, M.D., Assistant in Clinical and Operative Surgery, Harvard University Medical School, Surgeon to the Out-Patient Department, Massachusetts General Hospital. Third Edition. W. B. Saunders & Company, Philadelphia and London.

When the preceding edition of this volume was discussed in these pages rapid and great success was predicted for it. The prompt appearance of a third edition shows the popularity the work has attained and in its present form it should prove still more acceptable. Several new but not uncommon fractures are described and a chapter on gunshot fractures of the long bones is added. The recent wars in various countries have furnished much material for the study of this brand of the subject which the application of the Röntgen ray has shown in literally and figuratively a new light.

Further improvements are a great expansion of the index which now is very full and the addition of about thirty-five new illustrations, while some of the old ones have been replaced by photographs.

THE MEDICAL NEWS.
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ORIGINAL ARTICLES.

THE LIMITATIONS OF THE X-RAY IN THE TREATMENT OF MALIGNANT TUMORS.*

BY WILLIAM B. COLEY, M.D.,
OF NEW YORK;
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BEFORE a recent meeting of the New York Surgical Society I attempted to state what had, thus far, been accomplished by the X-ray in cancer. At the request of your president I shall this evening try to describe very briefly its limitations.

My personal experience with the X-ray in the treatment of malignant tumors began in February, 1902. Since this date I have treated with the X-ray in private and have had under my direction at the General Memorial Hospital 75 patients suffering from various forms of malignant tumors. At the hospital the treatment has been carried out by Mr. W. P. Agnew and Dr. James Ogilvie.

These cases were all inoperable, and most of them recurrent after operation. Twenty-seven were sarcoma; 21 cancer of the breast (17 inoperable; in four the treatment was given immediately after operation as a prophylactic measure), ten deep-seated abdominal cancer (four of the uterus, one of bladder, two of rectum and sigmoid flexure, three intra-abdominal sarcoma); 16 were epithelioma of head, face and neck, one Hodgkin's disease.

Without going into details, my results have been briefly as follows:

Sarcoma Inoperable.—In five cases of inoperable round-celled sarcoma the tumors entirely disappeared under prolonged X-ray treatment, varying from four to ten months. In one of these cases, a very large multiple recurrent round-celled sarcoma involving the entire neck, pectoral and axillary regions, in which the tumors disappeared, there was, three months later, a local recurrence, the size of an English walnut in the parotid region with extensive metastatic growths in both groins and a large tumor the size of a grape fruit in the region of the ascending colon. The X-ray was resumed September 24 and under continued treatment the external tumors have all disappeared and the abdominal tumor has decreased to one-third its former size.

In a second case of very extensive inoperable recurrent round-celled sarcoma of the pectoral region and axilla, which had disappeared largely under the mixed toxins alone and entirely under the combined toxin and X-ray treatment, there has been a slight local recurrence after the patient had remained well for four months.

In a third case of extensive recurrent round-celled sarcoma of the back, of very rapid growth, the disease after disappearance under X-ray treatment of four months' duration, recurred locally, reaching the size of an egg during an interval of eight weeks in which by reason of an attack of scarlet fever the treatment was discontinued. In two other cases there has been no return, but the treatment has been kept up in one case of sarcoma of the femur for eleven months, in the other for seven months. In the last case there have recently developed some suspicious glands in the neck.

[Note.—Since the paper went to press there have developed metastatic tumors in the back and pectoral region in the case of sarcoma of the femure, and the glands in the neck have increased in the other case.]

Nine cases of sarcoma have shown great improvement. In the remaining cases there was either no improvement or the improvement was too slight to be worthy of note.

In four cases of sarcoma originally under my care, I advised the X-ray treatment, but it was carried out by other men. One, an extensive sarcoma of the superior maxilla and orbit, was greatly improved, but died at the end of nine months. In the second case, a sarcoma of the mastoid region, the external part of the tumor nearly disappeared, but the patient developed a septic condition that finally proved fatal. The third case, a very rapidly growing sarcoma of the tonsil and neck, failed to show improvement from either X-ray or toxins. The fourth case, a very large sarcoma, size of eighth-month pregnant uterus. The treatment was begun nearly one year ago, the tumor has decreased in size, and the patient has been able to resume her work.

Of the 21 cases of cancer of the breast, I have seen small recurrent nodules entirely disappear after a few weeks' treatment with the X-ray in three cases, and yet, in every instance, a recurrence followed a short time after the treatment was discontinued. In one case I advised a patient of mine from whom I had removed a cancer of the breast with axillary involvement to have X-ray treatment as soon as she left the hospital. The treatment was given at an "X-ray Institute," and while she was having regular treatments a large mass developed in the periosteum of the ribs below the clavicle and also along the sternal border with extensive edema of the arm. In another case, a double carcinoma of the breast, I began the X-ray treatment immediately after operation at the General Memorial Hospital, and after two months of constant treatment, several small nodules, the size of small peas, have developed in the skin.

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* Read before the New York County Medical Society, December 22, 1902.

Of the larger recurrent cancers of the breast, I have seen no case in which the growth has entirely disappeared, although in most instances there has been temporary improvement, as shown by decrease in size, softening of the tumor and diminution in the pain. In some of these cases the treatment has been kept up for more than six months and pushed to the limit of a burn. In one case the pain was so much increased by the X-ray that the treatment could not be given more than four or five minutes at a time.

My experience with deep-seated intra-abdominal cancer is limited to ten cases, two of rectum and sigmoid flexure, four of uterus, one of bladder, three of intra-abdominal sarcoma. In one case of carcinoma of the cervix, the growth apparently disappeared; in one of the sarcoma cases there has been marked improvement, in the other two there was scarcely any. In one case of cancer of the sigmoid there has been considerable improvement as evidenced by decrease in size of growth and increase in weight, yet, there is little hope of entire disappearance.

In the remaining cases of abdominal cancer there has been little or no effect noticeable.

Fifteen Cases of Carcinoma of the Head, Face and Neck.—The superficial epitheliomas showed the best results, one the size of a silver half dollar on the forehead, has almost entirely disappeared, but it should be observed that it required nearly ten months to accomplish this result. Another of the bridge of the nose, extending into the inner canthus of the orbit, has nearly disappeared, yet only after seven months of constant treatment. Neither of these cases can be classed as cures, as only a few weeks have elapsed since the treatment was discontinued. The tongue cases, three in number, showed little or no improvement. One case of advanced Hodgkin's disease has shown very remarkable improvement. The glands in the neck, axilla, and groin have nearly disappeared and the splenic tumor has decreased in size two-thirds, under four months' treatment with the X-ray and toxins.

These results, while they show that the X-ray exerts a powerful inhibitory influence upon some malignant tumors, sufficient in many instances to cause marked decrease in size and in some cases entire disappearance, there is a tendency to speedy recurrence when treatment is stopped. Thus far there has not been recorded a single case of cancer treated that has remained well sufficiently long to be called a cure, in fact there is not a single patient well a year after the disappearance of the tumor.

While admitting that we have in the X-ray a most valuable addition to our means of combating cancer, I believe that the interests of both science and our patients will be best subserved by strictly limiting the method to inoperable cases and to cases after operation, as a prophylactic measure.

The method is still in the experimental stage, and while in this stage it is certainly unwise to advise a patient with an operable tumor to forego the well-demonstrated chances of a cure by excision and to submit to a new method of treatment that requires many months for even a temporary success and about the permanent value of which we are absolutely in the dark. We are frank to confess that two-thirds of our patients who have had cancerous tumors removed by operation do have a recurrence at some future time. In some of these cases the return does not take place for many years. It would seem that this great class of recurrent cancers would furnish a sufficient field for the trial of the X-ray. In addition to these cases we might add cases after primary operation as a prophylactic measure to lessen the chances of recurrence, though it would take a large series of cases, carefully traced for years, to determine the actual value of the X-ray in this field.

The chief hope of improved results in the treatment of cancer has long rested on earlier diagnosis and earlier excision. To the dread of the knife, which has always been a serious obstacle to the realization of this hope, is now added the idea that in the X-ray the patients have a substitute for operation which promises a sure cure without any of the disadvantages of operation.

The length of time necessary to cause a large carcinoma to disappear, to say nothing of a cure with the X-ray, is hardly appreciated by the physicians, much less by the laity.

While there are on record several cases in which small recurrent nodules have disappeared under a few weeks' treatment (I myself have had three such cases), in most of them there has been a speedy return when the treatment has been discontinued. When we consider the larger recurrent tumors which offer a fair comparison with the primary cancers as they come to the surgeon for operation, how many have we seen disappear under the X-ray? Nearly all show more or less improvement with alleviation of symptoms, enough, to be sure, to warrant our advising the treatment in inoperable cases, but far too little to justify us in offering this method as a substitute for operation. In my own experience I have observed 21 cases of recurrent cancer of the breast treated with the X-ray and yet, in not a single case has a large recurrent tumor disappeared, though in some cases the treatment has been kept up for eight months.

At the Massachusetts General Hospital, where they have as fine an X-ray plant as in any hospital in the country, managed by skilled men, they have had a single case of double recurrent cancer of the breast disappear after a year's treatment. There still remains an enlarged gland in the axilla. [Private communication from Mr. W. I. Dodd of Mass. Gen. Hosp., Dec. 20, 1902.]

It is not any feeling of chagrin at the loss of our occupation as surgeons, that prevents us from subscribing, at least at present, to the opinion expressed at the recent meeting of the American Electro-Therapeutic Association, favoring X-ray treatment for *primary malignant* tumors. Not to dismiss the surgeon too rudely from the field he has so long considered peculiarly his own, the suggestion was offered that "some of the more limited cases of cancer could be treated by the X-ray until only a small nodule was left, and then, it seemed wise, to do a minor operation to complete the cure."

If further experience proves that the X-ray offers those poor unfortunates afflicted with cancer greater chances of cure than surgery has been able to afford them, I am sure, there will be no one more ready to sheath the knife and retire from the field, than the surgeon who has had the largest experience with malignant disease. Yet, at the present moment, I believe that the interests of these patients are best served neither, on the one hand, by forgetting or underrating the results of operative treatment, nor, on the other hand, by allowing the enthusiasm that naturally is associated with a new method, to lead us to overestimate its value or forget its limitations.

It is unfortunate that at the present moment so little distinction is made, certainly by the laity, and probably by many of the profession, between so-called "clinically cured" cases treated by the X-ray, and the cases regarded as cured by the surgeon. We read of reports giving 50 per cent. of cures by the X-ray, that is, "clinically cured." [The exact meaning of this new term has not yet been defined.] If these results are compared with cases treated by operation, no surgeon would think himself justified in regarding them as cured, until at least three years had elapsed without recurrence.

Furthermore, if these operated cases were judged by the same standard as that used in the X-ray cases, it would be fair to say that 90 per cent. could be counted as cured by operation, inasmuch as this percentage remains free from recurrence fully as long as the cases of X-ray cures that have been reported.

The number of earnest and sincere workers in this new field is already so large as to give promise that we shall be able, in a short time (a few years), to give the X-ray its proper place in the therapy of malignant tumors. In the meantime let us hope that every fact for or against the method may be placed on record and given an impartial hearing.

A PLEA FOR A NEUROLOGICAL HOSPITAL IN NEW YORK.

BY L. PIERCE CLARK, M.D.,
OF NEW YORK.

NEW YORK is in urgent need of more special hospitals. In this respect it could not do better than to follow the example of London with its heart and lung, fever and nervous hospitals. There is no more pressing need in this line here to-day than some sort of ample provision to care for the acute and curable cases of nervous disorders. Neurology indeed is a comparatively new science as one is again impressed by the historical portion of Professor Erb's recent London lecture. Yet the needs of this class of cases has always been with us.

It is a surprising fact that although the three nervous hospitals of London care solely for nerve cases and have a long waiting list, no special hospital, nor even neurological ward, exists in any of our large general hospitals. It is a legitimate inquiry to ask what becomes of these patients. A few chronic cases are in the City Hospital; a still larger number, those either on account of the inherent nature of their disease or neglect in proper care and treatment, are at present in the incurable wards of the almshouse. The greater majority, however, curable and incurable, subsist on private charity and in many cases go to swell the increasing class of public mendicants and beggars. Physicians who treat these patients at the public out-clinics are fully aware of the imperfection of a dispensary diagnosis and of prescribing medicines under home care, where observation, dietetic and hygienic rules cannot be carried out.

There is one central idea steadily gaining ground in the minds of thinking physicians that our knowledge of the nervous system has so far progressed that if therapeusis is to be of value diagnosis must be earlier and the details of treatment must be arranged upon broad lines of general medicine. The nervous system is only to be greatly influenced through agents that modify the general bodily metabolism carried out under fixed conditions. No special legislation would be necessary for establishing a hospital of this character as might be in founding a psychopathic hospital. Then, too, the latter for mental diseases might later form a necessary and correlative adjunct to the former. As to the question of expense: This in a large measure could be met as it is at the Queen's Square Hospital in London, by arranging for contributory wards for the reception of those patients both in and outside the city who are able and willing to pay for expert attention and treatment.

The teaching values of such a hospital would be incalculable for the large medical schools. The cosmopolitanism of New York medicine has not extended as far as it should in post-graduate teaching upon the nervous system. The yearly migration of American physicians to France and Germany for advance work of this kind is still an unrequited appeal for more earnest work here at home.

The manner in which such work may be best inaugurated to meet the practical ends in view is a problem not yet adequately nor satisfactorily settled. If it were a matter of didactic teaching alone it might be simple; but bedside teaching is the essential, either individually or in small sections. A neurological hospital would be the natural center for such bedside teaching; laboratories should also be provided here for research in the nature and treatment of nervous affections which shall embrace chemical, physiological and histopathological equipment. Here too, systematic teaching upon the minute anatomy of the central nervous system could be carried out which as yet has not been done in a detailed manner in this country. The internes of the hospital should consist of clinical clerkships for senior students in medicine, advanced clerkships for medical graduates who have finished from general hospitals and who wish to specialize. The house staff might be selected from the more able clinical clerks. An out-patient clinic should be incorporated with the hospital for classifying eligible lists of patients.

The erection and proper equipment of such an institution for the poor of all classes in the near future would be a worthy charity for modern philanthropy in a unique and untried field of benevolence. In the meantime it should be the duty of the city to set aside wards in some of the general hospitals in the borough of Manhattan which may for the present at least be organized as a provisional hospital for the immediate care and treatment of acute nervous diseases.

62 West Fifty-eighth Street.

THE NEGRO AS A CRIMINAL AND HIS INFLUENCE ON THE WHITE RACE.*

BY LOUIS EDELMAN, M.D.,
OF HUNTSVILLE, ALABAMA.

EVOLUTION is the great factor in modern history. From the dug out hut to the marble palace, from the ape to the man, from the forlorn worm to the strong animal, there is evolution. Providence has created a wheel of progression and from its motion, sparks of light fly out creating smaller wheels, each going at a higher speed and receiving its motive power from the first atom of creation.

From the nude savage, who roamed the wilderness of Asia, to the great thinker and master-mind of to-day, all this did not come in an hour. It took centuries and ages to develop the mind of man. Education, books, and schools are among the greatest factors that have helped to develop and purify the mind, like the flowing brooks spreading their waters upon the meadows and with their silvery drops making the grass to grow, the flowers to bloom, kissing the sun-scorched vine, impelling it to climb higher and higher. Education not only develops the intellect to higher virtue and morality, but it is also the great cause that develops the resources of a nation. For every dollar the State spends on the education of its children, black or white, she saves two which she would otherwise spend upon jails and almshouses.

It is not the wise alone that leave their imprint upon the sands for posterity, but the criminal leaves a bad impression upon the future generation, especially if the publishers exploit the heroism of a criminal.

Important Question.—Your secretary emphasized in his circular that he would like a paper upon the sociological question of to-day. There is not a more important question that involves the welfare of the South than the negro problem and its solution.

The white man's burden is here to stay and he must seek a remedy to lighten it. Severe punishment, lynching, burning at the stake, are not the best means of solving the problem. The bad influence on the white race of lynching negroes is almost eternal.

In the present modern civilization there are many things which influence and mold manhood and womanhood. Heredity is a powerful factor in life. The society in which we live, the books we read, the zone in which our home is located, the poverty we suffer, the wealth we enjoy, the kindness shown us or the cruelty inflicted upon us, tend to mold our lives. The child is subjected to many visible and invisible forces. The forces of nature that govern the white man also govern the black man. Crime need not necessarily be charged to the black man. Crime is natural. It belongs to animals as well as to men. Larceny began with the creation of the first human being. It was Adam and Eve who first stole the forbidden fruit. Self-preservation is the first law of nature. Animals as well as men have risked their lives to obtain food which did not belong to them. In the early ages of civilization, humanity did not recognize larceny as a crime. The Spartan's crime was not in stealing, but in its detection. The Gauls, Athenians and Teutons believed possession to be nine points of the law. Education alone has brought about the condition of recognizing personal property and personal rights.

Percentage of Criminals.—There are in this country 866 criminals to every million of white inhabitants, and 2,974 criminals to every million of negro inhabitants. The percentage of negro arrests in the Southern cities is about 60 per cent. In Washington, D. C., with a population of 277,782 in 1901, 26,062 arrests were made; of these 12,582 were from the white population of 189,457, and 13,780 from the colored population of 88,325. Montgomery, Ala., with a population of 30,346, made 2,687 arrests in 1901, of which 1,793 were from a colored population of 12,000, and 894 from a white population of 18,000. Birmingham, Ala., with a population of 38,415, made, in 1901, 10,479 arrests, of which 4,030 were white and 6,600 colored. The city of Louisville has a population of 205,000 of whom 57,000 are negroes. In 1901 there were 7,958 arrests and of this number 4,313 were negroes. In Nashville with a population of about 63,000 whites and 37,000 negroes, there were in 1901, 9,837 arrests of which 6,081 were negroes. In Atlanta, with a population of 65,000 whites and 38,000 negroes there were 17,286 arrests, 5,784 whites and 11,502 negroes. In Jacksonville, Fla., with a population of 28,429, there were in 1899, 3,683 arrests of which 976 were whites and 1,919 negroes.

Professor Starr, of Chicago University,

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* Read before the Tri-State Medical Association, Birmingham, Ala., October 7, 1902.

claims that in the State of Pennsylvania, where there is little opportunity to assert that the courts are prejudiced against the colored criminal, the negro furnishes 16 per cent. of the male and 34 per cent. of the female prisoners, though he forms only two per cent. of the population. In Chicago, which is said to be the "negro heaven" he furnishes 10 per cent. of the arrests, though he forms only 1⅓ per cent. of the population.

I have taken these statistics at random and you will perceive the alarming conditions of negro criminality.

Reason for it.—The reasons that the percentage of criminals in the black is larger than in the white race are, first, slavery; second, ignorance; third, environment.

The effects of slavery have been to a large extent the cause and origin of petty larceny among the negroes. Being deprived of their liberty, watched closely by their masters, the fear of punishment made cowards and petty thieves of them. The same conditions exist today in Russia and Turkey among the peasantry. Up to forty years ago the negro was absolutely ignorant, not knowing the first principle of life. Crime was natural with him and his only guide was his debased instincts. The negro is the natural product of his environment. Bad association and living in filth and dirt have made him a criminal.

I have heard it so often said: "Educate a negro and you make a criminal out of him." Statistics do not prove it. Of the 24,272 negro criminals in 1890, 13,138 could neither read nor write, or 57.13 per cent. were absolutely illiterate. After forty years of freedom, Booker T. Washington and W. H. Council have struck the keynote of the negro problem: that in labor lies the redemption of the negro. There are too many negro idlers, who are living from the white man's kitchen.

What are the means to diminish the crime among the negroes? First, encourage the work of Booker T. Washington and W. H. Council. Second, look upon the negro as a human being, as a man who needs your help. But the best means to diminish crime among the negroes is a strong vagrancy law and a reformatory school for the children. A gentleman of high standing in the South told me that he knew of cases where negroes committed petty crimes in order to be sent to jail and be fed. The State is under obligation to its tax payers and to posterity to care for the degenerates and idlers.

An investment of a few thousand dollars in land and agricultural implements would not only save the tax payers large sums of money, but it would give the negro a chance in life to become industrious and make a good citizen. My plan is for the State to own a large tract of land, so that whenever a man becomes idle or becomes a prominent figure in police circles, he could be given an opportunity to go to work on the State farm or leave the State. Treat him kindly and pay him whatever he is worth above the cost and expense of maintaining him. The convict farm of Mississippi pays to the State $200,000, or more, per year, so does the convict farm of Arkansas. I have recently written to many chiefs of police in the larger cities of the South asking their opinion about a vagrant law and they all forcibly approve of it.

The sending of young boys and girls to the penitentiary for petty crimes is an outrage upon humanity. Coming in contact, as they do, with hardened criminals, who are beyond redemption, naturally breeds the infectious poison, and after being released they remain criminals and a menace to society. For your own selfish purpose, agitate this question when you go to your homes. The cry in every community should be for a vagrancy law, the State ownership of a large farm and a reformatory school for young criminals.

In Philadelphia, Louisville, New York, Chicago, and a great many other cities, they have houses of correction where they teach young criminals a trade. They have to remain there for five years and after that time they leave with a good trade, fully able to take care of themselves. The incapacity of making a living breeds crime, but when a man has a trade he is fully able to cope with the world. The physician who devotes his life to preventing disease, should give a portion of his time to preventing crime. There is not another profession that gives more of its time to elevate humanity than the family doctor. The negro is with us to stay. There is no visible means, at present, of eliminating him, either by extermination, or by emigration. He is part of our body politic, and it is our duty to make a good citizen out of him. Persecution, hatred and depriving him of the right to vote is a bad plan. Give the negro who has shown himself worthy by industry and good behavior the right of suffrage, and thus encourage others to follow in his steps. Treat him kindly, and you will make him your friend. Persecute him and you will make a criminal out of him. The negro's future either for good or bad is in the white man's hand.

AFFECTIONS OF THE LABYRINTH RESULTING FROM GENERAL AND ORGANIC DISEASE.*

BY THOMAS R. POOLEY, M.D.,

OF NEW YORK.

The great advance in our knowledge of diseases of the external and middle ear within the past 25 years has not been equaled by that made in the pathology of the inner ear. On the contrary, we are as yet in the beginning of our knowledge, notwithstanding the results of the recent important and interesting investigations made by clinical observations and post-mortem examinations. The principal reason for this lies in the fact that we so rarely have the opportunity for anatomical examination of the ears of patients who have been clinically examined during life, suffering from diseases of the hearing apparatus. Thus it is that, on the one hand, we have a series of interesting clinical observations on the diseases of the internal ear without being able to refer them with certainty to their pathological changes, and on the other hand, a series of post-mortem appearances of the internal ear, few of which can be referred to cases which have been carefully examined during life.

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* Read before the Section of Otology, New York Academy of Medicine, Nov. 13, 1902.

The purpose of this paper is to consider, principally from a clinical standpoint, but also with some reference to pathology, a brief outline of those diseases of the inner ear which are associated with general or organic conditions of the system. This arrangement will be carefully adhered to by excluding, as far as possible, all diseases of the acoustic apparatus caused by trauma, affections of the middle ear extending to the inner ear, and those from toxic causes, also congenital deaf-mutism. I shall also exclude the so-called Ménière's disease, which in my opinion is only a complex of symptoms indicating affection of the labyrinth, which may be due to a variety of pathological conditions.

In a paper limited by the short time at my disposal it will not be possible to enter minutely into the details of diagnosis, methods of examination, etc. I must take it for granted that this is familiar ground to you all. For instance, it would be an easy matter to fill up all of my time with a description of the differential diagnosis of diseases of the middle ear from those of the inner ear. Such, however, is not my intention.

In judging of so many disturbances of the ear it is important to bear in mind that the auditory nerve is the most "impressionable" of the nerves of sense, and that its function is more often interfered with by general disease and by chemical changes in the blood, infections of specific microbes and purulent infiltration than either the optic, gustatory, olfactory or other sensory nerves. The anatomical changes in the inner structures are, however, but little known. The connection between certain organic diseases and ear affections has been alluded to by some of the earliest writers as occurring in the course of affections of the stomach, liver, kidneys, uterus, etc. Politzer (Diseases of the Ear, p. 687) very properly remarks that this is, however, a much less frequent cause than is usually supposed, for changes in the middle ear are generally found to exist. But even in cases of admitted disease of the auditory nerve it must not on that account be connected with the organic disease, for aural and organic disease may develop quite independently of each other; however interchanges between these organic diseases and the organs of hearing cannot be denied. With these general considerations I shall now proceed to the enumeration of those diseases which are the most frequent in occurrence and in which are found complications of the inner ear:

Cerebral Anemia and Hyperemia, unless associated with organic lesions, seldom effect any serious change in the ear, they may, however, cause subjective symptoms, such as tinnitus and giddiness, and anemia in patients convalescing from a serious disease is an occasional cause of deafness which, however, subsides as the general condition improves.[*]

In ordinary meningitis the auditory nerve and structures in the labyrinth are seldom affected, but in a few recorded cases purulent inflammation of the ependyma, softening of the floor of the fourth ventricle, purulent infiltration and atrophy of the auditory nerve were found after death. In children who recover, deafness is usually complete symptoms of loss of coordination are present for some time. In adults the deafness is less marked and tinnitus continues for an indefinite period.

Hemorrhagic Pachymeningitis has been found to cause deafness by blood extravasations between the fibers of the auditory nerve.

Cerebrospinal Meningitis.—I have classed this affection under the head of cerebral diseases although, as is well known, it usually occurs in an epidemic form, and during the prevalence of such epidemics here, in Germany and elsewhere, numerous cases of both blindness and deafness occurring in its course have been observed.[†]

At an early stage of the disease pain, tinnitus and more or less deafness occur, and may continue until the patient becomes insensible. There is also opisthotonos, general convulsions and high fever. Ear affections are more liable to appear in children than in adults and the loss of function generally involves both ears. Knapp (*Archives of Otology*, Vol. XIII, p. 214) reports a case in which only one side was affected. If the meningitis does not prove fatal marked unsteadiness of gait shows itself and the deafness continues during convalescence. The unsteadiness passes off after a time but the deafness remains.

In some cases the deafness is accompanied by loss or impairment of function of one or both eyes from purulent irido-choroiditis, by paralyses of the extrinsic eye muscles, by disorders of speech and symptoms indicating involvement of other nerves. Facial paralysis is absent in the majority of cases.

The late Dr. Moos in his valuable monograph on Epidemic Cerebrospinal Meningitis and the Subsequent Accompanying Disturbances of Equilibrium (1881), says that authors differ a great deal in their percentages of permanent disturbances in comparison with the total number of cases observed. This is no doubt explained, as pointed out by Hovell in his book (Diseases of the Ear and Nasopharynx) that the liability to aural disease is not in proportion to the meningeal affection, and different epidemics vary as to the frequency of the complications referred to. It has been pointed out, too, that symptoms of deafness and loss of equilibrium may be due to changes in the brain or its membranes without any lesion in the organ of hearing itself.

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[*] Wilde (p. 373) says: "Of cerebral deafness or that arising from disease of the brain or its coverings, it is usually accompanied with giddiness, derangement of the stomach, and manifest impression upon the general health; a good example is observed in the case of the celebrated Dean Swift, on which I have already remarked. See Closing Years of Dean Swift's Life."

[†] Wilde (1853, p. 362) however, was the first to call attention to the relation between deafness and cerebrospinal meningitis. "In regard to chronic deafness not characterized or accompanied by any trace of marked lesion in the ear, I have seen a person so affected in process of time, longer or shorter as the case might be, show symptoms of cerebrospinal disease."

Cerebrospinal meningitis is the most common cause of acquired deaf-mutism. Moos in his cases found 59.3 per cent. This is not to be wondered at since the disease generally affects children.

A contention has arisen between several observers in regard to the etiology of cerebrospinal meningitis as a factor in causing disease of the inner ear. In 1882 Voltolini (Die acute Entzünding des hautigen Labyrinthes der Ohren irrthümlich für Meningitis Cerebrospinalis gehalten) published an account of 187 deaf-mutes whose malady in his opinion, was due to *otitis labyrinthica,* but in whose histories he failed to recognize any indication of cerebrospinal meningitis.

Hartmann (*Archives of Otology,* Vol. XIII, p. 297) and Gottstein (Weitere Beiträge zur Neuropathischen Form des Ménièrschen Symptomen Complex, *Arch. f. Ohrenheilk.,* XVII) have shown Voltolini's views to be erroneous and that in most of his cases the aural disease was due to cerebrospinal meningitis. The same conclusion was also reached by Moos (loc. cit.). According to the latter authority also, when the deafness comes on between the third and tenth days of the disease the labyrinth is involved by becoming itself the seat of inflammatory changes, but when deafness begins on or after the fourteenth day the internal ear has become infected by extension of infection along the auditory nerve. Knapp (loc. cit.) concludes that in cerebrospinal meningitis both the eye and ear may be affected in two ways; *i.e.,* by propagation of the infection along the optic and auditory nerves, which for the eye at least is the rarer of the two, or secondarily by metastatic inflammation of the interior of the eye or ear. In cases of the second category the functions of the auditory and visual nerves are not always destroyed. Voltolini's theory of an independent otitis intima fails to explain the simultaneous occurrence in the two organs.

The prognosis is embraced in what has already been said, but those who hear high notes have a better chance of recovery than those who cannot hear them, and in cases of absolute deafness without tinnitus the supervision of the latter symptom is a favorable omen.

The following conditions have been found postmortem: Swelling and hyperemia of the trunk of the auditory nerve, with deposition of purulent matter around it, and the same condition of the membranous labyrinth with extravasations of blood. The changes in the latter structure may be developed independently of the other aural lesions and either as a result of the neuritis or by propagation of the mischief along the *aqueductus vestibuli* and cochleæ.

When we take into consideration the importance of this subject and the fact that Moos wrote a monograph of 68 pages on it, the material for which he had been collecting with his well-known conscientiousness for more than eighteen years, this may well seem an altogether superficial abstract of this important subject; but time will not allow a more thorough consideration and we must pass on to other affections.

Lesions of the Cerebral Blood Vessels, including embolism, aneurism, rupture and thrombosis of the veins and sinuses, may involve the inner ear in various ways. Rupture, even though small in extent, may involve the auditory centers, when the effect on hearing is likely to be very bad.

Degenerative changes in the labyrinth with loss of hearing may be due to embolism. Thus, in a case of endocarditis reported by Harbermann (*Arch. f. Ohrenheilk.,* 1898, p. 119) the sudden, complete deafness of the right side was undoubtedly due to an embolism of the internal auditory artery. This condition has also been observed by Friedreichs, cited by Alderton (American Text-Book of Diseases of the Ear, Nose and Throat) as well as by others.

In Cases of Tumor of the Brain sight is much oftener affected than hearing and complete deafness is rare. Such growths sometimes produce deafness when they occupy or extend into the space between the internal auditory meatus and the side of the pons. More or less impairment of function is noticed in about one-thirteenth of all the cases.

La Dame's statistics, quoted by Hovell (loc. cit.) show that the hearing was affected in seven out of 77 cases of tumor of the cerebellum; in three out of 14 in the middle lobe; while in 45 other instances the parts involved being the anterior lobe 27; the posterior lobe 14; the floor of the fourth ventricle four, the hearing was unaffected. But affection of the auditory nerve was caused in various ways, the principal being atrophy of the trunk or nuclei from pressure, embolism of the internal auditory or basilar artery, and extravasation of blood at the base of the brain and into the labyrinth.

The evidences of infection of the ear are deafness, tinnitus and giddiness; deafness is generally one-sided but sometimes both ears are involved. Amblyopia is very commonly superadded and in some cases precedes the deafness.

Syphilitic Growths in the brain may involve the auditory nerve with disorders of its function as a result.

Diseases of the Spinal Cord sometimes give rise to disorders of hearing. Althaus (*American Journal of Medical Sciences,* April, 1879) describes a case of labyrinthine neuritis in a patient with locomotor ataxia who was under his care. Besides the usual symptoms there were vertigo, tinnitus and nausea but no loss of consciousness.

The external and middle ears were normal. There was a second attack of sudden vertigo followed by coma and for two days an elevation of temperature. This passed off in a few days and from that time on the patient improved and was able to walk three or four miles and attend to his business. Althaus looked upon this case as one of acute inflammation of the labyrinth. The second attack of nausea and vertigo he considered due to hemorrhage into the labyrinth. Atrophy of the auditory nerve has been discovered in several cases of ataxia. This is not so very remarkable, reasoning from analogy, as atrophy of the optic nerve is well known to be a frequent cause of blindness in locomotor ataxia.

I now pass on to consider the affections of the inner ear which more or less frequently attend general diseases, for the most part febrile and infectious in character. For the sake of brevity I shall consider diphtheria, scarlatina and measles under one head. As is well known, all of these diseases frequently affect the middle ear and probably extend from there to the labyrinth, so that I need only say here that Moos has found the streptococcus in the labyrinths of patients who had died from both diphtheria and measles (*Zeitsch. f. Hygiene,* 1888). Rohrer, of Zurich (*Correspondenzblatt f. Schweitzer-Ærzte,* 1884) reports a case of complete bilateral deafness following measles, in which there was a normal state of the middle ear and only intumescence of the nasopharynx. Complete deafness resulted and nervous symptoms—epileptoid spasm, headache, disorders of speech, all of which would indicate cerebral changes.

Moos (*Arch. of Otology*, Vol. XIII, p. 232) reports a case of double labyrinthine disease after scarlatina. There was purulent otitis media in both ears, and Wolff (*Arch. of Otology,* Vol. XIV) reports two cases of severe labyrinthine disease complicating scarlatinal diphtheritis with extensive destruction of the membrana tympani and otorrhea. The latter quotes Gottstein's essay (*Arch. f. Ohrenheilk.,* Bd. XVII, p. 16) as saying "whether we have to do with an extending inflammatory process or whether the ear affection is due directly to a specific poison can only be determined by carefully observing cases from the beginning, and this we seldom have the opportunity to do." For my part, it seems to me more probable that in nearly all of these cases the extension is from infection through the middle ear, and hence following my purpose to consider at length only cases in which this can be excluded, I dismiss further consideration of these cases.

Influenza or Grip.—While in all recent epidemics of influenza or grip in this country and abroad the various forms of aural complications observed in a small percentage of cases have been those affecting the middle ear, there is, however, abundant evidence in literature that in some cases the symptoms point to involvement of the inner ear. Moos (*Arch. of Otology,* 1895) has reported two cases. In one of these the symptoms were those of Ménière's disease; in the other, that of a man aged twenty-five years, sudden rupture of the membrana tympani took place with the escape of blood, but without giddiness. The hearing was totally lost and Moos inferred that a hemorrhage into the cochlea had occurred. In a very small percentage of cases the symptoms are referable entirely to the inner ear. The patient is found free from catarrhal symptoms and the whole trouble in the ear is referable to the sound-perceiving apparatus.

In the milder cases, and these in my opinion are of the most frequent occurrence, there is some hyperesthesiæ for all notes and sounds in general. Vertigo and other subjective symptoms are present but the acuteness of hearing is unimpaired. These symptoms almost invariably disappear. But disturbances of equilibrium rarely occur, although cases have happened in which not only this symptom was present but also nausea and vomiting, decided impairment of hearing, and even total deafness without any changes in the middle ear. Two views have been put forth as to the cause. One is that it is presumably due to the action of a specific micro-organism circulating in the blood conveyed to the labyrinth by the blood current and the lymphatics; the other is that the perceptive apparatus suffers from inflammation of the nerve trunk, as has been observed in the optic nerve, and results in sclerosis of the nerve fibers. Admitting the possibility of both these conditions, I should say that the latter is more often the case, especially in those instances which result in total deafness. This conclusion is based on a number of instances in which optic neuritis has been observed by myself and others after the grip.

Mumps.—The occurrence of ear complications in parotitis although it had been noticed by many different observers, did not until rather recently attract particular attention and the literature up to this time had been rather scant. Within the last ten years, however, numerous publications have made their appearance. The manner in which the ear is attacked still remains doubtful. Toynbee (Diseases of the Ear, 1867, p. 361) points out the connection between mumps and deafness, and states that the latter condition was due to some affection of the auditory nerve. He says, "as a general rule no disease of the meatus, membrana tympani or tympanic cavity is present." Hinton (Questions of Aural Surgery, p. 220) believes the occurrence of deafness from mumps next in frequency to that from scarlatina. This statement, however, is not borne out by other observers. Sir Wm. Dalby (Diseases of the Ear) says that mumps must be included in the causes which induce deaf-mutism. He has on many occasions known partial or complete deafness to occur from this cause. Politzer (in his last edition of Diseases of the Ear) only makes slight mention of this disease as a cause of deafness.

Symptoms.—When the labyrinth only is affected the disease may be on one or both sides, and is generally complete and incurable. Gruber reports a case in which swelling of the gland was comparatively slight, and yet on the third day the patient became totally deaf on both sides. The case was a sporadic one and the symptoms of the mildest type. Following these earlier views all of the more modern text-books point out diseases of the inner ear as sequelæ of mumps. The cases in journal literature on this subject of late have become too numerous for me to mention them all.

Five cases are recorded by G. Brunner, of Zürich (*Arch. Otol.*, Vol. IX, p. 102); one of his own, the others respectively by Buck (*American Journal of Otology*, Vol. III, p. 209), Roosa (Transactions of the American Otological Society, 1881) and Moos (*Arch. Otology*, Vol. XI, p. 13). Brunner's case was a woman, thirty years old, with double mumps. Soon after vertigo and tinnitus developed. The vertigo increased and at evening she said she could not hear with her right ear. She remained in bed eight days, during which time the swellings decreased but the tinnitus and vertigo remained. When she got up she reeled like a drunken person. The vertigo gradually disappeared, but the noises and the deafness in the right ear increased. Examination showed the left ear normal and on the right side normal membrana tympani and middle ear, but total deafness and absence of bone conduction. Buck's two cases are briefly as follows: The first was a girl who on the third day of an attack of mumps had sharp pain in the ears, and on the following day she discovered that she had lost her hearing. The second case was that of a man in whom deafness developed without pain during an attack of mumps. In both cases the parotid glands were equally involved but only one ear was affected. Buck thought in both cases the deafness was due to some disease of the labyrinth.

Roosa, in the last edition of his book reports a similar case. Moos' case was a boy of thirteen years, seen by him ten months after the occurrence of deafness. He had had double parotitis for ten days, epidemic at that time. The hearing was totally abolished on the fifth day, vomiting occurred on the sixth, on the eighth he left his bed and staggered as he walked. The latter symptom gradually disappeared. There was no striking departure from the normal in the appearance of either membrana tympani. The boy had become mute. He seemed to have perception by bone conduction in the right ear but none whatever in the left.

Brunner refers to the fact that even in the large German text-books no mention is made of such conditions, with the exception of a notice by Moos and Urbantschitsch where in speaking of labyrinth hemorrhage, reference is made to a post-mortem specimen by Toynbee, after mumps.

I have dwelt thus at length on Brunner's cases, and others to which he refers, because of the most excellent summary which he gives of the symptoms and course of the disease, and to which I shall return hereafter when I allude to a few more of the published cases.

To the five cases of Brunner, Knapp adds two others of his own (*Arch. of Otology*, Vol. XI, 232, 385), one in which the deafness without any evidence of middle-ear affection was on the right side only; in the other it was bilateral, absolute and also without implication of the middle ears.

Kipp (*Arch. of Otol.*, Vol. XIII, p. 116) reports two cases of total loss of hearing in one ear from mumps. In the first there was total loss of hearing in the right ear when first noticed fifteen days after an attack of mumps, while the patient was suffering from metastatic inflammation of the left testicle. This case differs from all others on record in that the deafness was developed while the patient was suffering from metastatic orchitis. Kipp refers to a very similar one reported by the late Dr. Noyes (Trans. American Otol. Soc., 1879, p. 342). In this case the ear symptoms appeared before the orchitis.

In Kipp's second case, a boy of 14 years, seen two years after an attack of bilateral mumps, the history was that while suffering from this disease he suddenly became deaf in the left ear and remained so. Kipp found total deafness in the left ear, the one in which hearing was lost from the mumps. The middle ear, as far as was possible to ascertain, was healthy, except that the membrana tympani was slightly more transperent than usual. The right ear showed all the usual symptoms of an acute catarrhal inflammation of the middle ear. He was treated for this in the usual way and a month later his hearing was nearly normal. Kipp thinks that this case was interesting because of the fact that two years after an attack of a kind which led to loss of hearing in one ear, he was attacked in the other by probably an entirely different disease. In these cases nasopharyngeal catarrh may have existed before the parotitis developed and the ear disease which occurred during the mumps may have been a middle-ear affection. The slightly atrophic membrana tympani would support such an assumption but if the primary disease was situated in the tympanum it must have caused secondary labyrinthine disease for the deafness in this ear was complete, as shown by tests with tuning forks.

Swan M. Burnett (*Arch. of Otol.*, Vol. XIV, p. 19) reports a case of absolute loss of hearing in both ears accompanying an attack of mumps. There is nothing very unusual in his case except that both ears were affected. The parotitis was epidemic and three of four other children in the family had been attacked, some very severely, but the patient's attack was light. About a week after the attack began it was discovered that he was totally deaf. He staggered and heard loud musical tones, and laughingly informed his mother that he was drunk. Aside from these nothing unusual was noticed or complained of. Burnett examined him 16 days after the loss of hearing and found no abnormality of the membrana tympani and there was no unsteadiness of gait but the hearing power was nil. Burnett gives as the practical points in his case the mildness of the attack of the mumps and the certainty of the deafness being due to labyrinthine disease.

I have had no trouble in finding more similar cases than I have time to enumerate, and shall now give in brief the symptoms observed in all of them.

Brunner (loc. cit.) arrives at the following conclusions with regard to deafness after mumps:

1. The nervous deafness after mumps may be unilateral or bilateral;

2. It is complete and according to past experiences, incurable. (Here I will call attention to exceptions to be mentioned later.)

3. It develops rapidly (in a few days) with vertigo and subjective noises, the latter symptom lasting a long time.

4. There is little or no fever, pain is very seldom complained of and consciousness is not lost.

5. The complication is noticed in both children and adults, but would seem to be more frequent in children.

The deafness and other aural symptoms occasionally precede the local pain and swelling and must often be considered as an evidence of general infection. In most cases, however, the aural symptoms are developed either between the third and eighth days or as the disease subsides. Deafness appears suddenly and rapidly increases. It is usually accompanied or closely followed by tinnitus, giddiness, pain in the forehead or occiput and nausea. The patient staggers but there is no loss of consciousness. Pain may be altogether absent or when present, only of short duration. In some cases mumps is followed by distinct evidences of meningitis with subsequent marked unilateral deafness. Occasionally the deafness develops while the patient is suffering from metastatic orchitis, or the ear symptoms appear before the orchitis (Kipp and Noyes). Temperature varies; it is likely to be high, if the otitis appears at an early period. Both ears may be simultaneously or successively affected and the symptoms are not infrequently confined to one ear, the right side being said to be more prone to suffer than the left. The same difference is observed in the testicles. Examination of the membrana tympani and middle ear reveals no abnormalities.

The deafness is absolute for sounds and notes of all kinds, bone conduction being totally lost. The deafness is permanent but the other symptoms gradually disappear.

Deaf-mutism is sometimes attributed to mumps; Roosa reports two in 147 cases.

With regard to the nature of the disease, it is pretty generally considered that it is located in the labyrinth, as first pointed out by Toynbee. He speaks of a complete disorganization of the nervous apparatus in the labyrinth and of a dark-colored fluid in the vestibule and cochlea, which, by the way, is the only record of postmortem examination I have been able to find. The case is reported in his descriptive catalogue of preparations illustrative of diseases of the ear, in the museum of the author. How the disease invades the labyrinth we do not know, but in the absence of post-mortem examinations this point remains undetermined and becomes a matter of conjecture. Roosa's opinion that it comes through the canal into the tympanic cavity and from there into the labyrinth, is combated by the fact that neither the canal nor the membrana tympani are affected.

At least two different views are held as to the origin of purely labyrinthine disease associated with mumps. One regards the inflammation of the parotid as a local disease and the development of the process in other organs as the result of extension or metastasis. Combeau (Vogel-Ziemssen's Handbuch, Vol. VII, 1, 103) considers mumps as a general disorder with many local manifestations, which may localize itself in various parts of the body. The affection in the internal ear, possibly amounting in its final stage to atrophy of the auditory nerve, may be regarded as a direct local effect of the general infection, just as occurs in the testicles, ovaries, breasts, kidneys and prostate gland. These parts, however differ from the inner ear in that they are glandular organs.

It is altogether likely that the blood contains a specific poison, the nature of which is unknown, and that this passes into the inner ear and sets up a plastic or exudative inflammation, the products of which do not become absorbed but are converted into connective tissue that extends between the end organs of the nerve and the parts around, inducing atrophy of the sentient structures.

Another explanation is suggested by Urbantschitsch (Lehrbuch der Ohrenheilkunde, 3, Aufl., S. 436) namely, that the changes in the labyrinth are the result of reflex action. The irritation of the fibrillæ of the fifth nerve contained in the gland, is conveyed to the labyrinth. This is, no doubt, suggested to this author by the reflex theory of sympathetic ophthalmia, which I believe, is now pretty generally abandoned. Schwartze (Handbuch der Ohrenheilk., I. Bd., S. 585) gives as his view that all local disorders, including those of the labyrinth which occur in mumps, are due to the migration of a specific micro-organism.

In concluding this already too lengthy résumé, I bring to notice several cases, one by F. W. Jollye (*Arch. Otol.*, Vol. XXVII, p. 209) the others reported at a recent meeting of this Section (*Arch. Otol.*, Vol XXXI) by Dench, in which the administration of pilocarpine, at first subcutaneously and afterwards by the mouth, was followed by restoration of hearing. The latter observer, I may add, thought the prognosis good except where the lesion had existed too long.

Typhus, Typhoid Fever and Variola.—Murchison (Treatise on Continued Fevers of Great Britain, 3rd Ed., p. 177) observes that disorders of hearing and especially deafness occur in 50 per cent. of all cases of typhus, and that both the internal and middle ears are prone to be affected. To my mind it is highly probable that the effect produced upon sound perception is due rather to the effect of the specific poison on the cerebrum than on the terminal fibers of the auditory nerve, as shown by improvement of hearing during convalescence. In three cases of affection of the labyrinth in 42 cases, occurring amongst 130 typhus patients, prompt and complete recovery took place.

Hartmann (Affections of the Auditory Organs Occurring in Typhus, *Arch. Otol.*, Vol. IX, p.53) says that the deafness occurred about the fourth or fifth day, the patient complained of noises in the ear and a few days thereafter the attendant noticed more or less deafness, and in some cases complete loss of hearing. Nothing abnormal could be detected in the membrana tympani or middle ear. Both sides are usually affected, the symptoms pass off during convalescence and function is fully restored.

Murchison (loc. cit.) looks upon paresthesia—or, as he says, intolerance of sound, as a bad omen.

Typhoid Fever.—Aural complications connected with typhoid fever were noticed in the early part of this century. The additional fact that meningitis may be thus induced was observed and recorded by Louis (Recherches sur la Fièvre Typhoïde,Vol. II, p. 92) in 1841, and by Peacock, some years later (*Med. Times and Gaz.*, 1816, No. 13). All parts of the ear become affected but we are only concerned with the affections of the inner ear.

Eulenstein, Erlangen (Affections of the Ear During the Course of Ilio-typhoid Fever, Inaug. Diss., 1882, which is founded on cases collected by Bezold in Ziemssen's clinic at the Munich Hospital) says, the central or nervous form of the aural affection with negative diagnostic points is independent of the catarrhal process, and may be a sequence of the blood crisis or paresis of the nerve. Mention is made of the inflammatory changes in the nerve found by Moos.

Bezold (On the Affections of the Ear in Typhoid Fever, *Arch. f. Ohrenheilk.*, Vol. XXI, p. 1) recognizes, as does Schwartze, a deafness without noticeable evidence of inflammation, which appears to be due to central disturbances. In some cases the affection of the acoustic nerve comes on in the first few days. The causes of affections of the nervous apparatus are obscure, but it has been assumed that they are due to changes in the blood current, or specific virus may enter the labyrinth and affect the organ of hearing or cause degenerative changes in the nerve elements.

In fatal cases deposits of lymphoid cells, infiltration of small cells and new-formed connective tissue have been occasionally found. Again, however, would I emphasize the view stated at the beginning, that these disturbances are more often of a central origin.

In concluding the cases under this category, I only make the briefest allusion to the fact that in some of the severest forms of hemorrhagic smallpox the labyrinth is sometimes affected.

On autopsy the labyrinth has been found hyperemic or presenting circumscribed or diffused patches of infiltration. Hemorrhage into the sheath of the nerve is another appearance which is probably due to embolism and rupture of the vessel.

Diseases of the Inner Ear in Malaria.—In considering the affections of the ear occurring in malaria, it is first of all necessary and important to discriminate them from disturbances of the auditory nerve which may be caused by quinine, so often given in large doses in this complaint, for, as is well known, this drug causes toxic effects on both eye and ear.

Hotz (*Arch. Otol.*, Vol. IX, p. 241, Aural Complaints in Consequence of Malaria) speaks of Voltolini (*Monatssch. f. Ohrenheilk.*, Nov., 1871) and Weber-Lille's (*Monatssch. f. Ohrenheilk.*, May to July, 1878) description of an *otitis intermittens* and an *otalgia intermittens*, and reports several such himself; but as the essential features in all of these were the subjective symptoms of acute catarrhal otitis, the peculiarity of the disease being its intermittent character, we may omit any further mention of them here.

Knapp (*Arch. Otol.*, Vol. IX, p. 232, Report on 806 Cases of Ear Disease Treated in Private Practice) gives a very remarkable case of deafness from malaria or cerebrospinal meningitis. A young man of seventeen years, had always been in good health until the evening of March 20, 1881, when he had chills lasting a few hours. He vomited during the night and the next morning was dizzy, drowsy and delirious; grew maniacal at noon and became totally unconscious in the evening. His temperature was high and he vomited all he took. This condition lasted three days. He was attended by the best physicians of New York. On the third day his consciousness returned. All the physicians but one, who diagnosticated cerebrospinal meningitis, thought it a violent attack of malaria. When he awakened from his stupor a dose of 2.5 grams, equal to 40 grains, of quinine was given, which he retained. Then he was given 0.30 grams, equal to five grains, every two hours for one day, and 0.30 grams, equal to five grains, three times daily for several days. After the first dose he had the most intense buzzing in both ears which disappeared from the right ear several days later, but not from the left, which remained deaf. For six weeks he felt sick, and staggered when he walked.

Knapp says: "I declared the left ear completely and incurably deaf," but whether the primary disease was malaria or cerebrospinal meningitis he did not know. One-sided deafness from the latter cause does occur, but is very rare. I remember only one case from my own experience. It seems to me not at all unlikely that the large doses of quinine might be responsible for the deafness in this case.

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Typhus, Typhoid Fever and Variola.—Murchison (Treatise on Continued Fevers of Great Britain, 3rd Ed., p. 177) observes that disorders of hearing and especially deafness occur in 50 per cent. of all cases of typhus, and that both the with and sometimes alternates with the ocular disease. What is termed strumous ophthalmia and also corneitis are forms which the eye affection assumes. Occasionally it is that of irido-choroiditis."

Thus it seems clear that this astute observer had already noticed the connection between hereditary syphilis and eye disease, although he called it struma. These patients as described by him present the now familiar aspect of hereditary syphilis.

Schwartze's review of the literature of this subject (*Arch. f. Ohrenheilk.*, Vol. IV, p. 358, 5th Ed.), quoted by Knapp (*Arch. Otol.*, Vol. IX, p. 146), shows that many authors have described it (*i.e.*, v. Troltsch, Text-Book and *Virchow's Archiv.* XVIII, p. 19, case 5. A. Pagensteder *Deutsche Klin.*, 1863, 41-43. Hutchinson, A Clinical Memoir on Certain Diseases of the Eye and Ear Consequent on Hereditary Syphilis. Hinton, Clinical Remarks on Perforation of the Membrana Tympani and Some other Morbid Conditions of the Membrana Tympani. London, a supplement to Toynbee's Text-Book, p. 461. Wredin, *Monatssch. f. Ohrenheilk.*, 1869, Nov., p. 169).

Hinton states that hereditary syphilis furnished more than one-twentieth of all the aural patients at Guy's Hospital where he had charge of the Outdoor Department. Knapp points out the probable fallacy of this statement for other hospitals for five per cent. of all the cases would furnish 50 cases to every 1,000 of deafness from this cause which is not borne out by any statistics. Both Knapp (loc. cit.) and Kipp have more recently written on this subject. The latter has collected a series of cases in which disturbances of hearing caused by hereditary syphilis were combined with parenchymatous keratitis, notched teeth, and one case with syphilitic iritis.

I need not go more elaborately into the details of these cases which are familiar to all. I presented such a one to this Section, May 8, 1902, in which there was as clear and indubitable evidence of hereditary syphilitic deafness as has here been described. The patient had the evidences of parenchymatous keratitis and iritic adhesions in both eyes, for which he had been long under treatment before the ear affection developed, and was almost totally deaf in both ears. This case is given in detail in the report of the Section meeting (*Arch. Otol.*, Vol. XXXI, 1902). When the ear disease is due to inherited taint deafness it is seldom noticed until the patient is eight years old (Hutchinson). According to Mr. Laidlaw Purvis it occurs in the interval of five years before to five years after puberty. Dalby (Diseases of the Ear) puts the period at from five to fifteen years. The earliest age at which he observed the disease being five and the latest twenty-three years.

It usually occurs at a later period and is accompanied by keratitis or iritis, the latter being a frequent complication of the corneal disease. Other evidences of hereditary syphilis are often present, notched teeth, sunken bridge of the nose, scars at the angles of the mouth—besides this there is an unmistakable facial expression and pallor sufficiently well known to all who have observed these cases. Two-thirds of the cases are said to occur in females. The eye affection generally precedes that of the ear, exceptions to this, however, occur. Mygind (*Jour. Laryngol.*, 1892, Vol. VI, p. 337) reports such a case and says that they are not rare. Buck reports another (Trans. Am. Otol. Soc., 1887) in a child with hereditary syphilis who lost hearing from labyrinthine disease, and a few days subsequently developed syphilitic eye disease. These occurrences are rare in my observation of the disease, and it may be given as a rule that the eye diseases are the first noticed. And again, they are more common than the ear affections.

Hereditary syphilis of the labyrinth is often accompanied by middle ear catarrh and suppurative otitis. Pritchard and Cheatle (*Guy's Hosp. Gazette*, June 7, 1897, and *Arch. Otol.*, Vol. XXVII, p. 415) think that cases of inherited syphilis may be divided into two classes differing from each other in the mode of onset. In the first the deafness sets in without giddiness, the mechanism for equilibrium being apparently left intact. The symptoms take either a subacute or chronic course. In the second form the deafness is accompanied by giddiness and the symptoms may run an acute, subacute or chronic course.

The prognosis for the hearing in acquired syphilis is better than that of the hereditary form. This was stated by Dr. Dench, at the meeting where I presented my case, and it accords with my own observations in this particular. The deafness in acquired syphilis is likely to be permanent in patients of advanced age, or those run down in health, and when the earliest treatment of the disease has been neglected. In young subjects, on the other hand, of good constitution and coming under treatment early the prognosis is better. As a rule but little benefit from treatment can be expected in the hereditary form.

Knapp (loc. cit.) has reported a case the most important feature of which, distinguishing it from the majority of others, is its complete, and, as it seems, permanent recovery.

In conclusion, I give only the briefest outline of the post-mortem conditions. J. Baratoux (Trans. Int. Med. Cong., 1887, Vol. XXX, p. 850) in 43 autopsies on cases of hereditary syphilis found lesions of the middle ear in 27, of the labyrinth in four, and of both the middle ear and labyrinth in 12.

When the middle and inner ear were both affected without pus in the internal ear, there was vascular injection and cellular infiltration of the soft parts of the labyrinth, the ampullæ and the semi-circular canals, and instead of the normal liquid of the canal the parts were bathed in a sero-sanguinolent fluid. The caliber of the vessels was obliterated or diminished by cell proliferation in their walls and sometimes by fibrinous clots. In some cases the labyrinth was congested and there were hemorrhagic areas on the membranous portion, thus proving that the internal ear can be the seat of hemorrhage in hereditary syphilis.

Crockett (*Bost. Med. and Surg. Jour.*, 1897, Vol CXXXVI, Some Cases of Sudden Deafness from Syphilis) says, that we find changes in the periosteum about the foot plate of the stapes and the cochlea in the vicinity of the latter, and also degenerative changes in the nerve cells and blood vessels of the cochlea, but from clinical evidence he attributes the sudden deafness to effusion in the labyrinth.

In speaking of the treatment it is only necessary to say that this should be mercury or potassium iodide, the same as for the general disease, but I may add that pilocarpine both hypodermically and by the mouth has been used by Dench and others with marked improvement of the hearing.

Bright's Disease.—The last subject, which I shall briefly consider, are those affections of the inner ear which have been observed in acute and chronic Bright's disease of the kidney.

On Nov. 15, 1886, I read before the Section of Ophthalmology and Otology of the Academy of Medicine a short paper on the simultaneous occurrence of neuro-retinitis and labyrinthine disease affecting both eyes and both ears. This case was published in full in the *New York Medical Journal* and I only briefly refer to it here. The case was that of a man, forty-three years old, whom I saw in consultation with the late Dr. Helm, of Sing Sing. This patient had been suffering for two years from chronic Bright's disease and had been under the care of Dr. Helm with various symptoms and manifestations of this disease for some time. On April 12, while on his way home from work he was suddenly seized with an attack of severe vertigo and had to stop a number of times on the way. On reaching home he threw himself on the lounge, unable to turn his head without causing the most intense vertigo. By lying on his back he could obtain slight relief from the vertigo. Lying on the right side made everything go flying and on turning on the left side his face to the wall the vertigo became unbearable. There was loud tinnitus in the left ear. His condition remained much the same with the exception that he could turn on either side without causing such excessive dizziness, but now he found that he was extremely deaf in both ears. Since he became deaf the noises ceased "like a blank." He had some pain in the back of the head. On May 22, when I saw him in consultation, he had had since the first attack, a return of the noises and dizziness, also some pain in the occiput and the eyesight had become impaired. There was now total loss of hearing in both ears. Ophthalmoscopic examination showed the typical picture of Bright's neuro-retinitis in both eyes. Most careful subjective examination of the ears showed no evidence of middle-ear disease. Deafness was absolute.

I expressed my opinion to the doctor and friends that both deafness and impairment of sight were due to Bright's disease, gave a hopeless prognosis for hearing, but little hope of improvement in sight and said that the case would soon have a lethal termination. The patient lingered till July 22, when he died. Before this he improved for a time and could hear loud sounds with the left ear, the dizziness became less, his locomotion better, and he was improved in every respect until July 19, when he had a sudden hemorrhage into the right pleural cavity which was the immediate cause of his death.

An autopsy in which only the brain and kidneys were examined, was made by Drs. Helm and Husted. Both kidneys were somewhat congested, one was rather larger than normal and looked, on superficial examination, as if the cortical portion was relatively increased and the Malpighian corpuscles were engorged. The brain was decidedly softened. The cerebellum was normal. No tumor, blood extravasation or effusion was found. It is to be most deeply regretted that no examination was made of the inner ears in this case. Both the late Dr. Seguin and myself were telegraphed to be present at the post-mortem but we were unable to attend.

In commenting on the case I said the almost sudden onset of deafness with the general symptoms commonly known as Ménière's disease, and the existence of a neuro-retinitis such as I found in Bright's disease, is certainly very interesting and points to the seat of the disease as being in the labyrinth on both sides and its pathology as being probably hemorrhagic extravasation or effusion.

In the discussion following, Dr. Knapp said he had no personal experience of sudden ear affection in Bright's disease, but the retinal hemorrhages so common in albuminuria would suggest their occurrence in the inner ear.

Dr. Moos had indeed found hematoidin crystals in the cochlea.

Morf, Winterthür, Switzerland (*Arch. Oto.*, Vol. XXVI, XXVII, pp. 444-449), says that Dieulafoy was the first to draw attention to the frequent combination of disturbance of hearing with chronic nephritis. He and his pupils collected 35 cases of aural complications out of 72 patients suffering from acute and chronic Bright's disease. These cases, however, were not sufficiently well examined as to the aural symptoms, hence the exact location of the lesion is only conjectural. Morf collected 53 cases from literature (in which mine was not included) and added three of his own, making 56, in which the connection between the aural disturbance and nephritis was undoubted. These he put in two groups. The first contains such cases as are due to pathological changes in the ear, macroscopic, microscopic or revealed by functional examination. In the second belong such as showed no tissue changes to account for the functional disturbance. In cases of the second group we have neither otoscopic nor functional examination to guide us in locating these lesions. Various theories have been suggested to explain them. Field thinks that increased arterial pressure causing distention of the labyrinthine vessels and thus increasing pressure in the labyrinth, excites or paralyzes the sound-perceiving elements in the cochlea.

Opinions as to the value of this evidence differ as the theory does not explain those cases where there is no hypertrophy of the left ventricle, and when the heart's activity is weakened. Rosenstein was the first to consider the possibility of edema of the auditory tract as the cause. It is well known that nervous symptoms are very prominent in uremia and various cases have been cited showing that the auditory nerve or its central tracts may be involved. Such a one is given by the author we are quoting.

As in the eye, cases have been seen in which impairment of sight with the presence of albumin in the urine were the only symptoms, so also there are cases where loss of hearing with the changed condition of the urine are the only symptoms of nephritis. A case of this kind is reported by Morf in which, besides the slight visual disturbance, the loss of hearing was the only symptom which led to examination of the urine and discovery of the existence of active kidney disease.

The only statement which I have found relative to the frequency of disturbance of hearing in the course of nephritis is given by Dieulafoy as 50 per cent. which is slightly less than that of vision. The forms of nephritis in which affections of the ear occur is given by the same author in 16 cases, and Morf mentions a special form of kidney disease in 24 out of 56. I must refer those interested to the tables published in his paper (loc. cit.).

The ear symptoms are subjective noises of all kinds, duration and intensity, generally worse at night; deafness varying in degree to complete loss of hearing, which latter, however, is very rare.

As regards the second group of cases, the exact localization of the lesion is not possible, nevertheless there are a number of facts which indicate that we have to deal with the auditory nerve and its peripheral and central distribution. As hemorrhages in the brain are not of rare occurrence in chronic nephritis, especially of the interstitial variety, it is possible for the auditory tracts to become interrupted by such hemorrhage. Affections of this class usually recover.

Did time permit, the category of diseases which cause disturbance of hearing might be still further enlarged as, for example, diseases of the uterus, hysteria and other nervous diseases, etc. But I fear that I have exhausted your patience and I can only add that if I have been able to interest my readers, to show how instructive a field of research this subject opens up, and to induce still further observation and study, which shall add to our knowledge of a hitherto little known subject, I shall be amply repaid for the time and labor spent in the preparation of this paper.

IS ANY DISEASED CONDITION NECESSARILY SELF-LIMITED?*

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THE question of the self-limitation of disease is an important one. If a disease must necessarily run for a certain length of time in spite of all medical efforts, we have only to direct our attention to keeping the patient alive until it has run its course. But if no disease is self-limited, then we have something more to do, to endeavor to abort, cut short, and render lighter all putrid, septic, and contagious disease, which includes typhoid or enteric fever, which has always been supposed to be somewhat self-limited.

I have long been dissatisfied with the idea that typhoid or enteric fever and all contagious diseases must necessarily run for a limited time, because I reasoned that the different stages of what we formerly believed to be self-limited contagious disease appeared to be only the effects of the disturbance of the system, while the microbial or other operating cause was being eliminated. Since my observations with Professor, now Lord, Lister, in the Royal Infirmary of Glasgow, in 1867, I have published in the *New York Medical Journal* and other periodicals, some reports of my attempts to ascertain and destroy the microbial or other operating cause of disease by suitable and safe antiseptics, as well as accounts of what I had done in addition in the treatment of enteric or typhoid fever and all contagious diseases which had come under my care.

My first successful efforts were in typhoid fever. I commenced with an antiseptic, generally sulphocarbolate of sodium, from two to four grains in solution for adults, with two or three drops of tincture of nux vomica. This was administered every six hours, at six and twelve o'clock, alternating with cinchonidine, two or three grains, at nine and three. An improved cathartic pill was given daily, with a warm foot-bath at evening and sinapisms over the abdomen morning and night; for food hot toast-water, half milk, as a drink, or hot bread and milk at meal time, if tolerated; and the patient was kept out of bed during the day, as far as might be safe, in order to secure better rest at night.

The result of this treatment has been that in cases seen very early there has appeared to be an arrest of the disease; indeed it has apparently been aborted. In cases seen a trifle later, when the microbial or other cause had poisoned the system more generally and especially involved the intestinal glands in congestion and incipient inflammation, warm sinapisms all over the abdomen twice a day were used as well as the warm foot-baths, and the disease generally developed no complications; these patients were generally able to be out of bed during the day, and to get about light business or visiting in about a week. But when a case was first seen at a later stage, after the general system had become more intensely poisoned by the bacterial toxins and the intestinal glands inflamed, so that incipient ulceration threatened, with perhaps cerebro-meningeal inflammation; additional treatment with wet cups to the back of the neck and very rarely a blister to the epigastrium was employed in some cases. Under these conditions my patients have been out in about two weeks as an average.

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* Read before the Syracuse Academy of Medicine, 1902.

Now, leaving out of the estimate the aborted cases, which were all seen early, including only —perhaps about one-third of all those treated— the cases seen a little too late for abortion, out in about one week, those seen later still, out in about two weeks, and reckoning cases which I had treated before I used antiseptics as having run about 21 days, the average duration since using antiseptics being about 10 or 11 days. I now find that my experience, up to the present time corresponds with my statements published in the *New York Medical Journal* of August 15, 1885, and April 1, 1891, and in other journals at an earlier date, in which I gave to antiseptics the credit of cutting short typhoid or enteric fever nearly one-half besides aborting one-third of all cases treated in the earliest stages, before the poison had produced much gastro-intestinal disease or infected the system to any considerable extent.

So much, then, is to be credited to antiseptics bearing against the self-limitation of typhoid or enteric fever. I had formerly treated the disease, except for the antiseptics, about as I have since; and as nearly as I can estimate my death-rate has been less than one-half what it was before I used antiseptics, and confined mainly to cases far advanced when I was called, complicated with either intestinal hemorrhage or a wasting diarrhea, with or without intestinal perforation. I should state that in aborted cases, as well as in those out in one or two weeks, I have invariably continued the tonics and antiseptics in gradually decreasing doses for about two weeks after the patients are out; the tonics to keep up the strength and the antiseptics to destroy the germinating spores. The shell of these spores being the most resisting substance in the material world,* and resisting all antiseptics until the spores germinate; hence the necessity of taking measures to prevent a relapse in all microbial diseases which are propagated by spores.

Enough appears to have been accomplished to show that, the cause out of the way as far as possible, there is not necessarily any self-limitation to the duration of typhoid or enteric fever; though when the cause continues to operate, the elimination of the poison, with no special complication, except the intestinal, will usually require perhaps 21 days.

My observations in the treatment of strictly contagious diseases, such as diphtheria, scarlatina and rubeola, correspond very nearly with those just described in typhoid; several cases under similar early antiseptic treatment, having apparently been aborted; two at least of scarlatina, several of diphtheria, and some among the other diseases treated. In regard to using antiseptics with tonics, either instead of or in addition to what I had formerly used to tide through such diseases, supposing them self-limited, I am fully satisfied that the average duration of all contagious diseases treated by me has been less than one-half what it was before I used antiseptics; the complications have been fewer and the death-rate much lower, especially in diphtheria.

These statistics in relation to strictly contagious diseases appear to indicate a slight improvement over my published account of observations in 1885, 1891 and of earlier date, concerning my use of antiseptics.

In view of the foregoing facts in relation to typhoid or enteric fever, as well as all contagious diseases that have fallen under my observation, I am thoroughly convinced that none of them necessarily has self-limitation, as was formerly supposed. And hence, if this is true, it evidently becomes our duty to treat the patients *to cure,* by aborting, cutting short, and rendering lighter contagious diseases as well as all others, instead of merely trying to get them through imaginary self-limited diseases, as we formerly did, because we did not know the cause, or, in any case, how to destroy it, as we do now.

And further, as all contagious diseases must necessarily have originated without exposure to a person thus diseased, we have a right to infer that they all have a similar origin now, and in many cases are not caused by contagion. Especially does this appear to be the case in phthisis pulmonalis, now regarded as more or less contagious. It is probable that strictly contagious diseases are communicated from one person to another far more frequently than they arise spontaneously, for the reason that a person thus diseased furnishes a greater source of the poison, whatever it is, than any other source likely to be encountered. On the contrary, consumption, if strictly communicable from one person to another at all, is with far more frequency spontaneously contracted, and, I am convinced, from various vile habits, from irregular eating, or the consumption of improper food, from some or all of which the system becomes depraved, thereby preparing the grounds for the action of the microbial matter, if not actually producing it. Without such predisposition, the poison in my opinion, would very rarely, if ever, develop tuberculous disease; the physical condition thus furnishes the predisposition, if it does not generate the poison causing the disease, far more frequently than it communicates it from one person to another in ordinary health, however much exposed.

And while so far as I know, no one claims any self-limitation in phthisis pulmonalis, as in enteric fever or any of the strictly contagious diseases, this claim in the case of any disease is but an apology for bridging over our ignorance which we must abandon by the exercise of common sense, in accordance with facts; and conclude that if consumption is ever eradicated, as well as all other diseased conditions of whatever name, it must be largely accomplished by a return to the observance of the laws of life and health which we, as physicians, should of course follow and teach. For it was by various departures from the laws of our being that the multitude of diseases originated during the past ages; increasing much more rapidly in the regions and during the ages in which the various imprudences have been more practised, as a glance at the past 5,905 years unmistakably indicate. I have been curious enough to trace out historically, the fact that human life has been cut short, from nearly a thousand years to an average of less than 50 through disregard of the principles of right living; and if the microbes and other poisonous causes of disease have not been thus *produced,* which is probable, the human system has been thus depraved and rendered *susceptible* to their poisonous influences. As guardians of health and life we must, if we can, not only cure diseases understandingly, but warn all under our influence to avoid the causes, such as the habitual use of alcohol, opium, tobacco, and all other dangerous filthy habits, deleterious to life and health. We should always bear in mind the fact that there is not necessarily self-limitation in any diseased condition, so that we may the more earnestly direct our efforts for aborting, cutting short, and rendering lighter all putrid, septic, and contagious diseases, as well as all others. Our success will then depend largely upon the *stage* of the disease in which we begin our treatment; as we might rationally expect, on common sense principles. Let us try it, then, perseveringly; and let the clergy, by virtue of their calling, kindly aid us in our efforts thus to raise the standard of human excellence above that of unnecessary disease and untimely deaths.

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* Pall's Bacteriology.

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MEDICAL PROGRESS.

SURGERY.

Gall-stones Impacted in the Lower Part of the Common Duct.—The transduodenal route, otherwise called duodenocholedochotomy, applicable in cases of impacted gall-stones in the lower portion of the common duct, was described first by McBurney in 1891. The following conclusions concerning this method, after twelve years of general use, are offered by C. V. CHIENHOUS (Ann. of Surg., Dec., 1902): (1) The transduodenal route has a well-defined place in the surgery of obstruction of the common duct produced by gall-stones; (2) lithotomia transduodenalis, first advocated and practised by McBurney in 1891, either after his methods, that is, with the excision of the papilla, or Collins' method, that is, dilatation of the papilla, is the method *par excellence* for all cases of gall-stone impacted at or near the papilla opening, as soon as experiments of manipulation, to press the stone into the duodenum by bimanual manipulations, have proved unsuccessful; (3) choledochotomia transduodenalis is indicated for stones impacted in the retroduodenal portion of the common duct, or before the diverticulum of Vater, as soon as efforts to dislodge the stone up into the supraduodenal portion have proved futile; (4) in all cases where choledochotomia transduodenalis has been performed, it is advisable to suture the common duct to the duodenum to avoid infection (choledochoduodenostomia interna); (5) choledochotomia transduodenalis seems to be more advisable than choledochotomia retroduodenalis, because it can be more easily performed, and the integrity of the pancreas is not interfered with; (6) it has not been proven by statistics that transduodenal choledochotomy has a greater percentage of fatalities produced by septic infection than supraduodenal choledochotomy. Further contributions in this direction are desirable for the purpose of procuring definite conclusions. Most of the cases where sepsis was the cause of death of the patient after an operation on the common duct, were cases of infection of the bile passages before operation, and the method of operation was not responsible for the fatal result.

Ureters.—The following conclusions from studies of the ureters will make instructive reading for any one. They are the result of considerable research by A. von L. BROKAW (Ann. of Surg., Dec., 1902): (1) The uterer is not a uniform calibered tube; (2) it consists in general of three isthmuses or sphincters located at points in the ureter where projecting adjacent structures compromise; kink its lumen. The ureteral lumen is compromised by (*a*) the distal renal pole projecting the ureter medianward, producing what the author terms the proximal isthmus, a sphincter or neck of the ureter; (*b*) the ureteral lumen in compromised at the point where the vasa iliaca project the ureter ventralward, producing what the author terms the middle isthmus or sphincter, the flexura iliaca ureteris. The middle ureteral isthmus is due to the increased ventral projection of the ureter by the vasa iliaca on assuming the erect attitude (man, erect bimana). Quadrupeds do not possess the middle isthmus, and consequently less lumbar ureteral spindle; (*c*) the lumen of the ureter is compromised at the point where its distal end penetrates obliquely the muscular wall of the urinary bladder; (3) compromised lumen by isthmuses or sphincters induce ureteral dilatations—reservoirs or spindles. There is a ureteral reservoir proximal to each ureteral isthmus, *e.g.,* (*a*) ureteral pelvis proximal to the proximal isthmus or neck; (*b*) lumbar spindle proximal to the middle ureteral isthmus; (*c*) pelvic spindle proximal to the distal ureteral isthmus in its vesical wall; (4) the ureteral spindles are more pronounced in woman than in man on account of the proximal and distal arteria ureterica having an excessive or periodic hyperemia during reproductive life (pubertas, menstruation, gestation, puerperium and climacterium). Consequently, in senescence, when its proximal and distal arteria ureterica becomes affected, with arterial sclerosis or calcification, lack of nourishment will induce pathologic dilatations of the lumbar and pelvic spindles; (5) calculi lodge at the ureteral isthmuses; (6) torsion of the ureter or kink may easily compromise the ureteral neck or proximal ureteral isthmus; (7) surgical interventions on the ureter should be performed at the ureteral reservoirs or spindles on account of ample lumen and wall; (8) pathologic conditions of the ureter lie mainly in defects of the ureteral wall (inflammatory products, paresis, tuberculosis, etc.), producing deficient peristalsis, or in the mechanical obstruction to the ureteral stream (calculus, kink, torsion, stricture); (9) so long as the ureteral peristalsis is not interfered with, and especially the ureteral stream is not obstructed, the ureters perform their function; (10) as soon as any mechanical obstruction to the ureteral stream arises (as kink, calculus, stricture) the non-drainage induces residual deposits, with resulting accumulations of bacteria, whence the vicious circle occurs in the tractus urinarius exactly similar to vicious circles arising from obstructions in the pylorus or the biliary ducts; (1) the ureter is an independent organ, conducting the urine from the kidney to the bladder by rhythmical waves, regardless of altitude or force of gravity. It is an elongated duct, interpolated between kidney and bladder with similar functions to a bladder, a reservoir; (12) the ureter being located in a universally loose areolar bed, and being longer than the distance between its proximal and distal ends, is capable of an extensive range of motion in pathologic conditions or for surgical intervention; (13) the irregular caliber of the ureter, dilatations (reservoirs, spindles), and constrictions (isthmuses, sphincters) is an hereditary heritage from the Wolffian body enhanced by environments.

Enlarged Prostate.—In an extensive review on this interesting and uncertain question, L. R. G. CRANDON (Ann. of Surg., Dec., 1902) draws the following conclusions as to its cause: The underlying cause of the usual forms of prostatic enlargement and of certain forms of prostatic atrophy is a slow formation of new connective tissues due to infection or to infection aggravating a senile degenerative process; (2) the gonococcus is probably most often the special infection, because (*a*) of its great frequency; (*b*) other inflammatory causes are not common in the parts in question; (*c*) a great similarity exists between the histology of gonorrheal processes and those seen in senile prostates. (3) neoplasms, fibromyomata, and adenoma occur, but may be called rare.

Hand Disinfection with Sublamin.—Extensive bacteriological examinations with sublamin, a combination of mercuric sulphate with ethylenediamin led D. ENGELS (Arch. f. Hyg., Vol. 45, No. 4) to believe that the drug forms an excellent disinfectant for the hands, for in 2 to 3 per cent. aqueous solution it does not irritate the hands, since it can penetrate into the depths of the skin and there kill all germs, and since all pyogenic germs readily succumb under its influence. It is very readily soluble in water and nickel-plated instruments are not attacked by it. It is more difficult to obtain a strong alcoholic solution but this is even more efficacious than the aqueous; a two pro mill. solution here seems to act better than a stronger one. The greater penetrating powers of sublamin as compared with sublimate probably depends upon the organic radical, for ethylenediamin resembles ammonia in its softening and dissolving properties without being irritating. In strength one part of sublimate corresponds to 1.7 of sublamin, yet the latter is only one-tenth as poisonous. There is no reason why it should not entirely replace sublimate in hand disinfection.

Anesthesia.—The old question, which of the two, chloroform or ether, is the better anesthetic, is discussed in an interesting article by O. WITZEL (Münch. med. Woch., Dec. 2, 1902). To begin with, the author states that it is impossible to modify chloroform itself or its method of administration so that this cardiac depressant is rendered harmless. It is therefore more logical to resort to the stimulant ether in such form that its objectional features are removed. It is best to precede the narcosis by means of a small dose of morphine as it removes all element of fear from the patient. The ether is then given by the drop method, like chloroform; thus suffocation is prevented and the blood is not overcharged with the drug, although enough may be given to produce a narcosis. To prevent pneumonia, three points must be borne in mind: (1) Disinfection of the mouth and air passages. By this, aspiration of septic matter is prevented, and thrombi, if they occur, remain innocuous. (2) Proper position of the patient. The mouth should be at a lower level than the entrance of the larynx and the chest at a higher level than the neck and head. (3) Ventilation of the air passages by systematic respiratory motions after the operation. Many details of narcosis are regulated by the condition and disease of the patient. The pulse is studied several days before the operation and, if necessary, the patient receives digitalis and strophanthus for a short period. Alcoholic patients are not put upon the operating table before they have received an enema containing 50 grams of cognac. The urine must be examined carefully and in many cases it is advisable to first wash out the stomach. All instruments and drugs should be ready and at their proper place so that a collapse may be dealt with speedily. After the operation is over, the patient must be carefully watched; sudden chilling should be particularly prevented. Fresh air and frequently washing out the mouth diminishes the tendency to vomit, and if necessary, the stomach may be washed. If the patient cannot take deep inspirations on account of pain, he may receive small doses of morphine.

Leucocytosis in Appendicitis.—If the number of leucocytes during an attack of acute appendicitis remains normal or undergoes only a slight increase, S. COSTE (Münch. med. Woch., Dec. 9, 1902) finds that the inflammation remains restricted to the appendix or there is a serous exudate, and the course of the disease is mild. Yet a fecal concretion may perforate at any time and cause a purulent peritonitis, and this will not show in the number of leucocytes but in the increasing severity of symptoms. If numbers above 22,000 are obtained, an abscess is certain. With purulent peritonitis, the number of leucocytes will only rise if the system possesses enough power to withstand the infection. A sudden decrease after an initial rise, is a very bad prognostic sign.

Treatment of Perforations and Tears of the Gall-bladder.—Hitherto two methods, outside of tamponade, have been employed in the treatment of tears of the gall-bladder. These are cholecystorrhaphy and cholecystectomy. It was soon found, however, that these are either inefficient or too far-reaching in their results, hence an attempt was made to transplant the omentum into the gap. The method of L. BALDASSARI and A. GARDINI (Münch. med. Woch., Dec. 9, 1902) is superior, since traction on the omentum is prevented and since a more resistant wall results. The authors use a flap of peritoneum and muscle cut out of the abdominal wall in the vicinity of the laparotomy wound. The muscular layer is turned inward and the serous layer outward and the entire flap fixed by sutures. In a number of experiments conducted on dogs the recovery was uneventful, and when the animals were killed later, it was found that the flap had united perfectly with the rest of the gall-bladder, whose interior was normal in every way.

MEDICINE.

Exophthalmic Goiter.—The clinical history and symptoms of 120 cases of this disease is the subject of an instructive paper by G. R. MURRAY (Lancet, Dec. 13, 1902). In practical application the most important subject is the treatment. Under this heading he offers the following: The treatment of exophthalmic goiter is a large question and time will not admit of a detailed account of the treatment adopted in all his cases. He therefore confines himself to a short account of the lines of treatment which have proved to be most successful. No hard-and-fast lines may be laid down for the treatment of this disease. The symptoms vary so much in different cases that in each one the treatment has to be adapted to the special symptoms present and the social position of the patient. In the first place comes the general hygienic treatment of the patient. If the symptoms are severe, absolute rest in bed for three or four weeks is essential. In cases in which the nervous symptoms are predominant, or when there has been rapid emaciation, rest in bed may be combined with isolation, liberal feeding (especially with milk) massage and electricity; in other words, a course of what is known as the "Weir-Mitchell" treatment is of the greatest service. In less severe cases, and in cases in which rest in bed has already been carried out, it is well to regulate the patient's mode of life as far as circumstances permit. At least 12 hours should be spent in bed, from 10 P. M. to 10 A. M., breakfast being taken in bed. In addition to this, in many cases the patient should lie down from 2 to 3 P. M., and from 6 to 7 P. M. A quiet life in the country or at the seaside, as free as possible from excitement or effort, is most suitable. As much time as possible should be spent in the open air, partly reclining on a deck-chair and partly in gentle walking exercise, which may be gradually increased from half a mile to three or four miles a day, according to the progress made. As sufferers from exophthalmic goiter do not feel the cold much and are not likely to catch cold easily, they can spend much time out of doors nearly all the year round. Electricity is very useful in many cases, but is not sufficiently applied, owing to the modes of application recommended being too elaborate. The faradic current may be easily and efficiently employed by a method which was first described to the author by Sir Victor Horsley. Two flexible metal electrodes about four inches long and two inches wide, covered with wash-leather, which are connected by a small strap and buckle on each side, are moistened and accurately applied to the neck. One electrode is applied in front over the thyroid gland, and the other in back, on the neck. The electrodes are connected with the secondary coil of a small, dry-cell faradic battery, and a sufficient current is turned on to produce a distinct prickling sensation. This should be applied for an hour each night and morning for several months. Not only do the patients feel relieved for a while after its application, in this manner, but he has seen steady improvement take place under its continued use. In many cases no special diet is necessary. When there is any emaciation a liberal diet is necessary, which may be supplemented by two extra pints of milk in the day. If there is great emaciation, forced feeding may be necessary. In a great many cases, especially those that are seen in hospital out-patient practice, we can unfortunately carry out little more than medical treatment, and often in circumstances which are not at all favorable to recovery. Belladonna was frequently prescribed, and was useful in some cases, but the author has often been disappointed in its results. To be of use in exophthalmic goiter, any line of treatment should be steadily followed for several weeks, or even months, and patients often dislike to continue taking belladonna in sufficient doses to produce physiological results. Convallaria has proved useful in cases in which the frequency of the pulse has been very high, and is more effectual in lowering the pulse than any of the other cardiac remedies. Bromides are useful in cases in which there are marked nervousness and tremors. Arsenic is useful in nearly all cases, and may be combined with other drugs with advantage. The best results are obtained by giving small doses of three or four minims of Fowler's solution three times a day for a month or two, or for the first three weeks of each month for five or six months. Of the animal extracts, thyrus and suprarenal extract have both been of use. Thyroid extract is harmful, as it often exaggerated the symptoms, and should not be given in exophthalmic goiter. Special measures are frequently required for the treatment of urgent symptoms. The sudden attacks of diarrhea were readily controlled by laudanum and dilute sulphuric acid. Severe attacks of palpitation with very rapid pulse yielded to the application of an ice-bag to the pericordial area. Persistent vomiting in acute cases is difficult to treat. On the whole, rectal feeding and the administration of morphia, either subcutaneously or by the rectum, gave better results than other lines of treatment.

Eleven Acute and Eighteen Chronic Cases of Influenza.—During the summer of 1902 an investigation was undertaken to determine by examination of sputum the cause of cough and expectoration in cases in which examination for tubercle bacilli had proved negative. In one hundred out-patient cases thus examined by F. T. LORD (Bost. Med. and Surg. Jour., Dec. 18, 1902) influenza bacilli were found in 60. In 11 acute and 18 chronic cases influenza bacilli were present in overwhelming numbers. W. H. Smith's stain was used in order to bring out the gram-staining and gram-decolorizing organisms in sharp contrast. For cultivation of influenza bacilli Lord used blood-agar, made of 2½ per cent. agar, to which was added one-third of its bulk of human blood. It would appear from Lord's investigations that infection with influenza bacilli is prevalent apart from epidemics of influenza. Grassberger, working in an "influenza-free" period, also found influenza bacilli in the sputum and bronchial pus of 30 cases. Apart from epidemics there is nothing distinctive in either the acute or chronic clincal manifestations of influenza and the diagnosis can be made with certainty only by the examination of the sputum. The duration of the cough and expectoration after an attack of acute influenza does not usually exceed six weeks, but in some cases the duration is months or years. Many cases formerly classed as chronic bronchitis probably are chronic influenza. Cases of chronic influenza with paroxysmal dyspnea may closely resemble asthma; in these cases there is no apparent climatic or atmospheric irritation and ordinary asthmatic remedies fail to relieve. Neither Curschmann spirals nor Charcot-Leyden crystals are found in the sputum. The persistence of influenza bacilli in the respiratory tract does not often lead to marked emaciation. The subjects of such infection, harassed by a troublesome cough, more or less abundant sputum, dyspnea, occasional rises of temperature for brief periods, localized bronchitis, and doubtful or certain, signs of consolidation, are not infrequently supposed to have pulmonary tuberculosis.

Syphilis in the Barber Shop.—When one considers how few precautions are taken to prevent the communication of syphilis from one patron of the barber shop to another it is indeed surprising that so few instances are on record of this disease being acquired by the barber's utensils. A. FANONI (Med. Rec., Dec. 13, 1902), reports a case in which a chancre developed in a small razor wound within two or three days, and was followed by rather severe secondary symptoms in about one month. It is interesting to note that these cases usually require very active treatment on account of their virulence.

Pulmonary Syphilis Simulating Tuberculosis.—Several prominent authorities have recently called attention to the fact that pulmonary syphilis may so closely resemble tuberculosis, both in regard to the clinical symptoms and physical signs that a differential diagnosis is difficult to make, and is not usually considered on account of the confident belief that the tubercle bacillus is the efficient cause of the trouble. H. W. BERG (Med. Rec., Dec. 13, 1902) has met with several undoubted cases of pulmonary syphilis, and believes that it is a much more frequent condition than most authorities would give us to understand. The more or less subacute variety of syphilitic pneumonia and syphilitic bronchitis, properly so-called, is apt to occur in the secondary stage. Patients in the tertiary stage may show either a bronchitis, a stenosis of certain bronchi due to cicatricial contractions, bronchiectatic cavities filled with purulent material partially or wholly due to a mixed infection, gummata of various sizes and in the various stages of degeneration, or either a generalized or localized interstitial fibrosis. It will thus be seen that, so far as physical signs are concerned, syphilitic lesions of the lungs may be capable of causing considerable confusion, especially as they may be situated at or near the apices or around the roots of the lungs. The problem is still more confusing, for the two processes may occur at the same time, and the presence of a few tubercle bacilli in the sputum is very liable to at once detract one's attention from the possibility of a syphilitic accompanying process. The symptoms also are by no means diagnostic, but considerable help may sometimes be had from a close study of them. The cough is not so constant or persistent, owing to the small amount of sputum; hemorrhages are not so frequent, although they may occur; hectic fever is not so common but may be present, especially if bronchiectatic cavities exist; loss of weight is less marked than in tuberculosis, the anemia is not so great and night-sweats are seldom complained of. The absence of tubercle bacilli in the sputum is an important negative point while the presence of the bacilli in a slowly progressing pulmonary disease with a typical syphilitic history does not exclude the necessity of placing the patient upon an anti-syphilitic regimen. In another class of cases the symptoms and signs resemble those of a croupous or broncho-pneumonia, but the symptoms are rarely so acute, and instead of a rapid convalescence the case continues as one of delayed resolution, and the various changes in the lungs enumerated above may follow unless an anti-syphilitic treatment is instituted. In regard to the medication of these cases it is well to remember that the success of the treatment will be an important factor in the confirmation of the diagnosis, for although syphilitic processes usually respond readily to proper treatment, tuberculous lesions are, as a rule, made much worse by the iodides, and persistence in their use may result in converting a chronic miliary tuberculosis into an acute phthisis. The iodides should therefore not be continued longer than two or three weeks, unless the desired benefits are observable.

Adrenalin as a Stimulant.—To determine the value of adrenalin as a stimulant in vasomotor depression, M. S. MILES and W. MUHLBERG (Cleveland Med. Jour., Dec., 1902) have made a series of experimental researches in animals. In certain cases of circulatory collapse the usual heart stimulants have little effect, because it is not the heart which is at fault, but the vasomotor system. Adrenalin has been considered an agent which can readily overcome vasomotor shock by acting directly on the heart and arterioles, but is unfortunately evanescent in its action when injected into the blood. The aim being to make the action more prolonged and less powerful, the authors have extended their research in this direction. They produced a condition of shock in rabbits by excessive quantities of an anesthetic (ether). When more or less complete motor paralysis was present injections were given in the jugular vein with the object of increasing the blood-pressure, of digitalin, strychnine, whisky, salt solution, and adrenalin. Digitalin, whisky and strychnine were without effect on the blood-pressure. Normal saline caused a slight fall in the pressure and a decided slowing of the heart rate. The 1-1,000 solution of adrenalin was diluted 10 times, and one-half to one c.c. injected. An immediate and powerful rise of blood-pressure resulted, which remained up for about five minutes. The rise was often higher than the original pressure before the ether poisoning. The sinking was gradual, but not below the original level. The subcutaneous injection was not followed by so prompt an action. The pressure only rose when massage was practised at the site of injection, probably hastening in this way the process of absorption from the subcutaneous lymph-spaces. The authors draw the following conclusions from their experiments: (1) Adrenalin may be of value in so-called heart-failure during anesthesia, etc., when ordinary stimulants fail; (2) it is more likely to succeed where the respiratory centers are not paralyzed, since adrenalin does not appear to be a very powerful respiratory stimulant; (3) when used it should be given subcutaneously and slow massage done at the site of injection; (4), that dilution with normal saline solution by making absorption slower, causes a more prolonged and less energetic rise in the blood-pressure; (5) bad after-effects were not observed, but the danger from secondary hemorrhage as a result of the high pressure must be borne in mind; (6) adrenalin, subcutaneously, is indicated on theoretic grounds for the vasomotor collapse following cocaine or chloroform poisoning, and possibly shock after operation.

A Case of Progressive Pernicious Anemia.—This case, reported by Dr. MYSEL (Pract. Vratch, No. 44, 1902), is interesting, in the first place because, while every other remedy failed, feeding with raw bone marrow gave positive temporary improvement. Further, the autopsy showed necrosis and extravasations in the pancreas. This necrosis the author considers to be secondary to the general malnutrition of the vasculary system and the tissues in general.

Late Recurrence of Carcinoma.—On the cancer material, in the first surgical clinic in St. Petersburg, during the last thirty years, Dr. GEINATZ (Roussky Vratch, No. 44, 1902) studied the question, as to how soon after an operation for carcinoma a patient may be considered radically cured. He investigated 709 cases of carcinoma. Of these 122, or 17.2 per cent., were treated for recurrence of the disease. Of these last, in 15 per cent. the recurrence took place later than three years after the first operation, some as late as 19 years after the first operation. He concludes then that Volkmann's rule, that a carcinoma patient who is well three years after an operation may be considered radically cured, is erroneous, and a recurrence may take place through the whole life of the patient.

Disease of Mice Produced by an Anaerobic Bacillus.—In the course of extensive examinations of mice during the last epidemic of plague in Odessa, Dr. STEPHANSKY (Roussky Vratch, No. 47, 1902) discovered a disease of mice so far not described. This process involves sometimes only the lymphatic nodules, sometimes also the skin (atrophy) and muscular system. The disease clinically resembles leprosy. Morphologically, the microbe is a bacillus three to five microns long, stains similarly to tubercle bacilli and does not grow on the usual media.

Infective Arthritis.—Inflammation of the joints of an infective character has been known in pneumonia, typhoid fever, scarlet fever, influenza, erysipelas, glanders, acute rheumatism, and the ordinary surgical infections. There are certain other examples of infective arthritis, which may not be directly classified, and among the others, acute arthritis of infants is the most common. Taking the disease of infective arthritis as a whole, the following are points on prognosis and treatment offered by H. MARCH (Lancet, Dec. 13, 1902). In the first form of infective arthritis mentioned, namely, that which consists of a transient synovitis, arthritis soon subsides, often in the course of four or five days, and the joints completely recover. A suitable splint and warm fomentations will be the only treatment required. In the second group, in which the cavities contain fluid, the treatment called for is clear. It is the same as that which should be employed in gonococcal infection, where infusion has occurred. The fluid must at once be removed and the joint freely irrigated, either with carbolic lotion, one in 100, or with mercurial solution, of which, perhaps, the best form is biniodide, one in 1,000. To evacuate the fluid a full-sized trocar and cannula may be used, and irrigation may be readily performed through the cannula, or the joint may be opened by an incision at the side of the patella. If the fluid proves to be already purulent, the joint must be freely opened and the finger inserted to break down any adhesions which may have formed and behind which pus may be imprisoned, and then thorough and copious irrigation must be carried out. The immediate improvement and complete recovery observed in Mr. Page's cases after evacuation and irrigation was very striking, and it has its parallel in what many surgeons will have observed in cases of pyemia, namely, that when a joint has become distended with pus, if it is freely opened and copiously irrigated it may forthwith undergo a startling improvement, and, if the patient survives, may completely recover and retain absolutely free movement. In the third or plastic form, prognosis is distinctly unfavorable. The arthritis tends, as has been said, to extend over a considerable period. A large amount of new fibrous tissue is developed, both between the articular surfaces and in the peri-articular tissues, and the joint is converted into a massive scar, so that firm fibrous ankylosis, which may subsequently become boney, results. This strong tendency toward ankylosis is, the author thinks, one of the especial characteristics of infective arthritis. Nor are any means known at present by which it can be prevented. As to treatment, the best that can be done is to keep the joint, for the time being, at complete rest; indeed, the pain is such that no alternative can be thought of. Warm boric or opiate fomentations are required during the most acute stage, but when swelling and heat have somewhat subsided, a succession of small blisters will alike relieve pain and promote absorption. Later still, massage will be required to remove the swelling of the soft parts. A very important question is whether, in these cases, manipulation should be employed with the object of restoring movement. In the slighter cases this is advisable, but when the inflammation is either severe or prolonged, *a fortiori,* if it is both, the joint becomes filled up with cicatrical tissue and the restoration of movement is impossible. Forcible manipulation in such condition is not only useless but definitely mischievous, for it renews irritation and promotes the formation of scar tissue. Moreover, he has seen instances in which manipulation has left a joint, previously free from pain, so sensitive and painful for many weeks that it was necessary to keep it at complete rest, so that instead of being diminished, stiffness was increased. In the fourth group prognosis is highly unfavorable, for the arthritis is but one of the manifestations of a general septicemia and is often associated with other lesions of the gravest kind. Often the arthritis is rendered comparatively unimportant, except for the suffering it entails, by the speedy fatal termination of the case. In those rare cases, however, of which the septicemia is of a milder type and other local developments are absent, if the joint is at once freely opened and irrigated, repair may take place, sometimes with ankylosis, sometimes with restoration of considerable or even complete, free movement.

Heart Disease Cells.—The significance of these cells, called by the Germans "heart-failure cells," in the sputum is discussed by R. C. Regola (Gazz. Osped., Nov. 23, 1902) and are described, as he saw them in cardiac and pulmonary cases, as large round or oval polynuclear cells containing many granules and reddish-yellow pigment, presumably derived from the blood. These cells were seen most frequently in mitral disease; though they were present also in disease of the aortic valves and in pulmonary affections. They are believed by the author to have their origin in pulmonary congestion or small hemorrhages in the parenchyma of the lung; and their prognostic significance depends upon their persistence in the sputum and their quantity. Their presence in the blood-streaked sputum of cardiac patients, while not considered pathognomonic, are thought to have a certain diagnostic value especially in those cases in which morbid conditions of the lung such as emphysema, chronic bronchial catarrh, etc., or of the heart itself as in chronic myocarditis, pericarditis, etc. render diagnosis through physical examination alone, difficult.

Formalin in Pulmonary Tuberculosis.—As a therapeutic adjunct in the treatment of pulmonary tuberculosis formic aldehyde possesses certain distinct advantages according to W. G. Shallcross (Phil. Med. Jour., Dec. 13, 1902). It is gaseous, diffuses readily with air and is soluble in water. It is the nearest approach to a pulmonary antiseptic, is non-toxic, non-irritating and stimulant when administered in the proper manner. It lessens the absorption of the toxins, reduces pyrexia, relieves nervous symptoms and night-sweats and sharpens the appetite. The writer has devised a new form of inhaler, simple and readily constructed. It consists of a wide-mouthed "salt" bottle of a pint capacity, closed by a tightly fitting cork perforated with two holes. Through one of these passes the glass inlet tube reaching within an inch of the bottom. Through the other is passed a shorter tube bent at an angle extending just within the neck of the bottle. To the latter is attached a piece of rubber tubing several feet long with a mouth-piece at the end. This may be made from an atomizer bulb by cutting off one end. A piece of wire netting about four by 15 inches is covered with cheese cloth rolled tightly together and placed in the bottle. The liquid is then poured in in sufficient quantity to moisten the gauze and leave a slight excess at the bottom. The most satisfactory fluid found consisted of equal parts of 40 per cent. commercial formaldehyde and 95 per cent. alcohol. The inhaler is used for two to three hours daily, from 15 to 30 minutes at a time, at regular intervals.

Orthoform in the Diagnosis of Gastric Ulcer.—The value of orthoform in the diagnosis of the above condition depends upon its local anesthetic effect when it comes in contact with exposed nerve endings as in burns, ulcers, abscesses, etc. It is non-toxic even in doses of one dram daily and on account of its slow-absorption its effect persists for many hours. F. H. Murdoch (N. Y. Med. Jour., Nov. 29, 1902) has employed it in several instances and believes that it is a great help in diagnosing gastric ulcer, for it is powerless to relieve pain when applied to an intact skin or mucous membrane and hence will be inefficient when the gastralgia is due to other causes. Other methods are mentioned, such as the use of a teaspoonful of salt dissolved in a glassful of water taken when the stomach is empty. If an ulcer is present the pain will be greatly increased. A galvanic current may be employed with the negative pole applied over the left hypochondrium and the positive pole over the dorsal spine. Severe pain is excited so soon as the current passes through the exposed surface of the mucous membrane. The continuous use of orthoform is seldom necessary because, as a rule, the gastralgic attacks when caused by ulcer generally cease so soon as the patient is put to bed and restricted to liquid food.

Acute Circumscribed Edema.—This condition was studied and sharply characterized by Quincke in 1882. In his description one finds the picture of circumscribed edematous swellings, occurring chiefly on the extremities in the vicinity of the joints, but also on the back and face. The skin and subcutaneous tissue are involved and the individual swellings measure from 2 to 10 cm. in diameter. The normal color of the skin is usually retained; at times it may be unusually pale or slightly redder than normal. There is some tension and the patient experiences a throbbing sensation. The swellings appear and disappear rapidly, lasting hours or at times a few days; recurrence is frequent. The general condition of the patient is not altered. The condition is evidently nearly related to urticaria. If acute circumscribed edema attack the trachea or larynx death may result; but the rapid disappearance of the swelling generally acts as a safeguard. There is some difference of opinion about the prognosis in these cases; Cassirer considers the prognosis abolutely good, but this view cannot be accepted by those who have studied the cases reported by Osler, Wardrop Griffith and the cases now reported by F. MENDEL (Berl. klin. Woch., Dec. 1, 1902). The hereditary nature of the malady has been described before. Mendel confirms this by his account of nine cases occurring in a single family in four generations. The patients were all otherwise healthy and the disease must be regarded as a condition *sui generis*. Six of the nine patients succumbed, all in practically the same manner, and Mendel is not hopeful concerning the ultimate cure of the three members of the family who remain and who suffer from frequently recurring circumscribed edema in various parts of the body including the mucous membranes. Experience has shown that the attacks increase in frequency and intensity with advancing age. It is necessary to distinguish this disease from the symptomatic edema occurring in nervous disorders such as hysteria, syringomyelia and hemicrania. From urticaria it is possible to differentiate acute circumscribed edema, for while giant urticaria may somewhat resemble the latter condition, the etiology and clinical history are entirely different. In urticaria other eruptive features may be present and the throbbing is more marked. The edema begins in the skin itself in urticaria and in the subcutaneous tissue in acute edema; in the early stages of the latter the skin can be moved freely over the deeper swelling. In urticaria relation to some irritant can usually be traced; an article of diet or a drug may be the cause. In acute circumscribed edema such factors are wanting. Trauma cannot precipitate an attack, but if trauma occur at the beginning of a paroxysm it may determine the localization of the serous infiltration. The disease was long held to be an angioneurosis, but Mendel succeeded in causing a pause of several years in one case by a liberal use of laxatives, and for this reason is inclined to the theory of auto-intoxication. Aspirin also proved useful, presumably because of its antiseptic action in the intestinal canal. The most promising therapy seems, indeed, to be that which is based upon the theory of auto-intoxication.

The Viscosity of Sputum and Its Relation to Pertussis.—The circumstance that a decrease in the intensity of attacks of coughing does not go hand in hand with a diminution in the viscosity of the sputum (a thicker sputum is much more frequently repeated in light cases than in severe ones) is of weight in the therapy of pertussis, according to L. NEUMANN (Arch. f. Kinderheilk., Vol. 35, Nos. 1 and 2). He suggests that the use of expectorants that produce a liquefaction of the bronchial secretion might have some influence on the course of a case of pertussis. His observation that severe attacks are accompanied by a sputum of low viscosity and that a moderation of the severe paroxysms coincides with a thickening of the sputum, indicates rather that the attack of coughing stands in relation to the low viscosity of the pharyngeal and tracheal secretion and that the moderating influence on the severe paroxysms might be sought in something that would produce greater mobility of the sputum mass through a lower viscosity and the increase in volume of the latter.

Intestinal Occlusion from Enterospasm.—Apropos of a case in which this diagnosis was made, and in which the course of the affection and effect of sedative remedies used proved the diagnosis correct, H. FOLET (L'Echo Méd. du Nord, Dec. 7, 1902) discusses occlusion from enterospasm in general. As to its pathogenesis, the author finds it quite as natural to believe that a tetanic contraction may occur in the intestine—a hollow muscular tube—as in analogous organs, such as the esophagus and vagina in which esophagismus and vaginismus are generally recognized phenomena. In the evolution of the case described he believes constipation and hysteria to have borne a large part; the irritation or a hardened fecal mass causing the intestine to contract down upon it much as the choledochus and ureter act toward a calculus. As to the treatment, unless the symptoms induced by such occlusion are so grave as to make an operation imperative, he advises sedative remedies. For the relief of pain, local application of ice, and opium by mouth, or morphine hypodermatically should vomiting preclude the internal administration of the former; though it is preferred as having a more sedative effect upon the intestinal wall. Violent purgatives augment the spasm, therefore only mild laxatives should be used; preferably castor oil in small repeated doses.

Ankylostomiasis.—This parasitic disease, more properly called uncinariasis, was until lately believed to be a rare disease in the United States. Observation in the Southern States has shown that it is not uncommon among the negroes and poor whites. A very complete report of a case occurring in Chicago is made by J. A. CAPPS (Jour. Am. Med. Asso., Jan. 3, 1903). The patient contracted the disease along the course of the Panama Canal and succumbed about two years later, presenting the picture of a severe pernicious anemia. The infection probably takes place by swallowing the larva in food or drinking water and from dirty hands, but may also take place directly through the skin. The diagnosis is made by examination of the feces and blood, the latter revealing a condition resembling pernicious anemia. The ova found in the feces are characteristic and may be readily hatched out. The occupation of the patient is often suggestive, workers in dirt and clay and those exposed in contaminated localities being especially liable. The administration of thymol in a two-gram dose, repeated in two hours, and followed by a saline, seems to be the most effective method of expelling the worms. This is the first case reported as originating in Panama and its importance is evident, on account of the many workers who will be occupied on the great canal soon to be constructed.

Brinton's Plastic Linitis.—Under the name of plastic linitis Brinton in 1864 described a condition of the stomach which has since been the subject of some controversy, between those who hold it to be of a cancerous nature and those who believe it to be the result of a simple inflammatory process. Its macroscopical appearance is thus described by Brinton: The stomach is of a grayish-white color, hard to the touch and giving an almost cartilaginous impression. The walls are very much thickened, the various coats being well-defined and not all alike increased in thickness; the increase being greatest in the submucosa, the hypertrophy of the muscular and subserous coats ranking next in degree, and the mucosa being nearest the normal. The affection may involve the whole system or only a part; but the pyloric region is almost always affected. The volume of the organ is most frequently decreased, but it may be of normal size or slightly increased. Histologically the lesion consists in an infiltration of connective and fibrous tissue, with an especial increase of cellular elements in the submucosa, and hypertrophy of the muscular tissue. In four cases seen by A. FOLLI and U. BERNADELLI (Rif. Med., Dec. 4, 5, 6 and 9, 1902) the macroscopical picture presented all the chief characteristics described by Brinton; yet histological examination revealed the neoplastic nature of the affection and diffuse cancerous infiltration was demonstrated in every instance. The authors do not consider the presence of cancerous tissue in these cases, as proof positive of the neoplastic nature of linitis in general, but rather hold that a wider experience is necessary before a decision as to its exact nature can be reached; and suggest the possibility that the condition may be the expression of various diseases, all of which may present the same macroscopical characteristics.

Leucemia and Miliary Tuberculosis.—It is always of the greatest interest to see one disease modified by another and H. QUINCKE (Deutsch. Arch. f. klin. Med., Vol. 74, Nos. 5 and 6) was so fortunate to observe two cases of leucemia and one of pseudoleucemia, which shortly before death developed an acute miliary tuberculosis. Besides the symptoms of the latter disease, there were marked retrograde changes in the blood and in the spleen, the organ diminished much in size and the leucocytes were very much reduced in number, so that broken-down cells were very evident in the blood and this appeared hydremic. It would be interesting to resort to the tuberculin injections for the treatment of leucemia, the author has done this in six cases with some success, but unfortunately arsenic was given at the same time, so that the improvement might have been due to this.

Black-water Fever.—Black-water fever complicated by ankylostomiasis was observed in a patient from the tropics by D. MANN (Deutsch. Arch. f. klin. Med., Vol. 74, Nos. 5 and 6). All the author's observations point to the fact that both severe malaria and the administration of quinine are necessary to bring about hematuria. If quinine was given by mouth or hypodermatically after the patient had a chill, blood always appeared in the urine; if however the attack was not treated or quinine was given during afebrile intervals or after the patient was cured, this was not the case. Since most patients suffering from black-water fever, are also ill with ankylostomosis, it is possible that the anemia which this parasite sets up, plays an important part in that it reduces the vitality of the red blood cells and thus favors their disintegration.

Leucocytes in Typhoid.—The great value of a leucocyte count for the diagnosis of typhoid fever is again pointed out by A. KÜHN (Münch. med. Woch., Dec. 9, 1902) who lays more importance to the diminution in the number of white cells than he does to the Widal reaction. The symptom, however, is not absolute since it may be found in acute sepsis and occasionally in acute miliary tuberculosis. It probably depends upon a negative chemotaxis exercised by the typhoid bacillus, and actively chemotactic substances, such as hetol, are capable of inducing a leucocytosis in mild cases of typhoid. In measles the leucocytes are also generally diminished. A leucocyte count is also of value in surgical suppurations, especially in appendicitis. In most cases where the leucocyte count was low and the clinical symptoms of an abscess yet present, an encapsulated serous exudate was found. An acute abscess as a rule gives high figures, yet when it develops slowly and is well encapsulated, an examination of the blood may not aid in the diagnosis. In certain diseases, as in pseudoleucemia, the system may not be able to produce leucocytes and it is possible here that an abscess would not be accompanied by a leucocytosis.

Changes of Blood-pressure in Disease.—A study of the blood-pressure in Basedow's disease, conducted by A. GROSS (Deutsch. Arch. f. klin. Med., Vol. 74, Nos. 3 and 4), shows that in typical cases the blood-pressure was increased part of the time. Considerable variations in pressure also occurred, their cause was sometimes emotional but more often unknown. The changes in pressure were due both to increased cardiac action and increased arterial tension. The effects of digitalis on pressure were next studied and three groups could be distinguished: (a) The disturbances of compensation progressed and the drug exerted no marked influence on pressure; (b) the blood-pressure was raised with disappearance of symptoms, or (c) there was an incongruity between the blood-pressure and the circulatory disturbance, be it that the latter disappeared without rise or even with fall of pressure or that it progressed with rise of blood-pressure. In uremia, a decided increase in arterial tension was found in all cases.

Influence of Baths on Blood-pressure.—Ordinary baths of from 33° to 35° C. raise the blood-pressure and diminish the frequency of the pulse during the entire time of the bath, according to O. MÜLLER (Deutsch. Arch. f. klin. Med., Vol. 74, Nos. 3 and 4), when the temperature is raised up to 40° C. the pressure is first raised, then lowered beyond normal and finally raised a second time. Below 37° C. the pulse-frequency diminishes, above 37° C. it rises. Above 40° C., there is an increased blood-pressure during the entire duration of the bath with increased pulse-rate. With hot baths, the rise in pressure and in body temperature is simultaneous. In the artificial Nauheim baths, the rise in pressure is determined more by the temperature than by the carbon dioxide. Both factors influence the pulse equally. If the pressure falls, the greatest care must be exercised. All baths stimulating perspiration cause, in the healthy, an increase in blood-pressure and pulse-rate. Half and wave-baths increase the blood-pressure. If the patients are active, the pulse-frequency is increased, if they remain quiet, it is reduced. Douches of any temperature, if sufficiently intense, raise the blood-pressure. It is clear that the greatest caution must be exercised in hydrotherapy, where the heart is diseased or the arteries sclerotic.

Tuberculin as a Means of Diagnosis.—Tuberculin has been used very extensively by S. D. MADISON (Am. Med., Dec. 20, 1902), who summarizes his observations as follows: (1) Patients may react to tuberculin, and no evidences of tuberculosis be found at autopsy. Completely healed tuberculosis may react. Cases of proved tuberculosis may not react to the maximum doses. The evidence is not conclusive that other diseases than tuberculosis may react to tuberculin. (1) The margin of error of the tuberculin test is considerable and probably not less than 10 per cent. (2) The maximum dose should be higher than four milligrams, and not more than ten milligrams. Small, increasing doses, are not advisable, as the reaction is not so likely to be distinct on account of the tolerance which may be produced. An initial dose of three to five milligrams followed by the maximum dose is better. (3) The temperature should usually be normal before injections are given. When the temperature is distinctly above normal, a negative result is of no value, as these patients will frequently not respond at all, even to large doses. (4) It seems quite certain that the glycerin extract of tuberculin deteriorates, and a fresh body should frequently be opened, care being taken to keep it in a cool, dark place. The one-half per cent. carbolic acid solution should be prepared fresh. The deterioration of tuberculin is probably the principal factor in producing delayed reactions. (5) It cannot be said that the injections are entirely without ill results, but their use among suitable patients is no more dangerous than the use of chloroform or ether for diagnostic purposes and is quite as justifiable, as an early diagnosis of tuberculosis is of the greatest importance. (6) About 40 per cent. of all female patients admitted to the hospital react to tuberculin.

HISTOLOGY, PATHOLOGY, AND BACTERIOLOGY.

Effect of Freezing and Thawing on Bacteria.—Through a series of twelve alternate freezings and thawings, F. TESTI (Rif. Med., Nov. 19, 1902) has determined the resistance of the bacilli of typhoid, diphtheria, glanders, chicken cholera, and the spirillum of cholera, not only to low temperatures but to alternations of temperature. When subjected to such treatment, the bacillus of typhoid and the cholera spirillum evinced a diminished motility; and in colored specimens of the spirillum, changes in the shape were evident. A plasmolytic condition was seen in the bacilli of typhoid, glanders and diphtheria; but microscopical examination of cultures of bacteria so treated, showed that the normal morphological characteristics of each had been restored. Cultural development of all the bacteria occurred after 12 successive freezings and thawings; though that of the bacillus of chicken cholera was noticeably retarded, and of glanders and diphtheria slightly so. Generally speaking, the number of bacilli was but slightly decreased after treatment, save in the case of chicken cholera. After cultural development had taken place, animals were inoculated; with the result that they died within the same time, with the same symptoms, anatamo-pathological affections and bacterial findings as those inoculated with cultures of bacteria which had not been subjected to alternations of temperature; with the sole exception of those inoculated with the cultures of chicken cholera; in whom no evidence of the disease developed.

Value of the Phloridzin Test for Estimating the Functional Capacity of the Kidneys.—Advocates of the phloridzin test claim that as a means of estimating the sufficiency of the renal function it is so delicate and reliable that it may be used as the basis for decision with regard to surgical operations which depend for their success upon the integrity of the renal function. The most conspicuous example of this class of cases is that in which nephrectomy is contemplated, and in which it is necessary to know beforehand the functional capacity of the kidney which is to remain. The test in these cases is applied to urine taken from each kidney separately by ureteral catheterization or by segregation of the urine in the bladder by means of Harris' instrument. The technic of the phloridzin test is described by F. S. WATSON and W. T. BAILEY (Bost. Med. and Surg. Jour., Dec. 4, 1902). It consists of a subcutaneous administration of a sterilized preparation of the drug to which has been added an equal quantity of Na_2CO_3, the latter holding the phloridzin in solution. For persons of moderate size and weight the dose of phloridzin is five mg. Half an hour after the injection sugar should appear in the urine if there is normal sufficiency of renal function. Serious disease of the kidney is indicated if no sugar is present; and if the appearance of sugar is delayed or there is only a small quantity present it is taken as an indication of renal insufficiency. It is clearly established that phloridzin is a drug from which glucose is separated in its passage through the body. It is less well proved that the separation of sugar takes place in the epithelial structure of the glomeruli and tabules of the renal cortex and in no other part of the body. Renal function involves two factors: (1) Integrity of the epithelial structure, without which the kidney cannot effect chemical changes in certain substances and deliver them to the urine in the form of waste products; (2) the normal degree of permeability of the membranes which interpose between the blood and the urine in the renal parenchyma. If it is true that the separation of sugar from phloridzin does take place by virtue of the first of these two factors, and if sugar is found in the urine when the test is performed, we must conclude that the second function has been performed properly also. In a series of clinical tests Watson found that the average quantity of sugar eliminated in the first half hour after the administration of the drug in the doses stated, and when the kidneys are normal, is about .45 per cent.; and that the first half-hour's elimination is greater than the second half-hour's by about .06 per cent. When renal disease exists the first half-hour's quantity of sugar eliminated is about one-half as much as that when the kidneys are normal. The effect of ether anesthesia is to stimulate normal kidneys to greater functional activity, but the renal function is not, if judged by the phloridzin test, in any way impaired by the anesthesia. When the kidneys are diseased ether fails to stimulate their function. Taking a series of cases collectively the phloridzin test gives accurate indications of the condition of the renal functions. In a certain number of individual cases, it even appears to be more delicate and discriminating than the ordinary urinary tests, but the relatively large number of cases in which the reverse is true show it to be too variable to be trustworthy, or to induce Watson and Bailey to urge its adoption in preference to the formed methods of urinary analysis for estimating the functional capacity of the kidneys.

Excretion of Nitrogen in Pneumonia.—It is found by H. W. COOK (Bull. J. Hop. Hosp., Dec., 1902) that in cases of pneumonia a surplus amount of nitrogen must be excreted during the days of resolution that will correspond at the least to the original quantity of exudate poured into the involved lung. In most cases there is more, the rest representing in great part a continuation of the formation and an absorption of inflammatory exudate, plus other tissue destruction. In cases of marked delay in resolution, the continued high nitrogen output indicates a continuation of the local inflammatory process, so that in those cases of several months' persistence, we might speak of a chronic pneumonia. In cases of rapid resolution the leucocytosis curve follows the curve of nitrogen excretion with a very striking parallelism, and would seem to point to a causal relation between leucocytes and resolution.

Gas Evolved in the Decomposition of Hydrogen Peroxide by Pus.—It is well-known that when hydrogen dioxide is brought in contact with blood or pus, a lively effervescence due to the evolution of gas results. By experimenting with the pus obtained from abscesses produced by the injection of diphtheria toxins into the tissues of horses, J. MARSHALL

(Univ. of Pa. Med. Bull., Dec., 1902) could prove that this gas consists wholly of oxygen. The author then attempted to confirm Chanoz's statement, that the decomposition of hydrogen dioxide by blood is due to the fibrin and corpuscles of the blood. Horses' blood was defibrinated by whipping, the fibrin removed and the liquid placed in a cool place to allow the corpuscles to settle. A portion of the clear, supernatant serum caused a lively effervescence, while the washed corpuscles did not show any evolution of gas even under the microscope. No decomposing action could be demonstrated for fibrin so that the active agent must reside in the serum. By physical means, a decomposition could not be brought about since experiments with powdered carbon and a glass rod introduced into a strong solution, were negative. Egg-albumen, urine, aqueous solution of trypsin, glycerin, tuberculin and filtered saliva, failed to produce an effervescence. Further experiments showed that the constituent in blood which causes the decomposition is globulin and that the bactericidal action of peroxide is not due to its penetrating the bacteria and destroying their vitality.

A Method of Staining Sputum for Bacteriological Examination.—A method of staining sputum which has grown out of a study of several years is described by W. H. SMITH (Bost. Med. and Surg. Jour., Dec. 18, 1902). Solutions needed: Aniline oil gentian violet. IKI solution, iodine I, potassium iodide 2, water, 300. Saturated aqueous solution of eosin, Loeffler's alkaline methylene blue. Alcohol, 95 per cent., 4 parts; ether, 6 parts. Ninety-five per cent. alcohol; absolute alcohol; xylol. The specimen should be examined as soon as possible after it has been raised, as standing favors the growth of bacteria. No carbolic acid or corrosive sublimate should have been added to the specimen. A thin cover-glass preparation should be made by means of a platinum loop. Fix in the ordinary way by passing through the flame. Cover the fixed preparation with aniline oil gentian violet, holding well above the flame, and allow it to steam. Wash off excess of gentian violet with IKI solution; cover with IKI solution and allow to steam as before. Decolorize as much as possible with 95 per cent. alcohol. Wash a few seconds in alcohol-ether solution. Wash in water. Stain with aqueous eosin solution. Wash off excess of eosin with Loeffler's methylene blue; cover with methylene blue and allow to steam as before. Decolorize slightly with 95 per cent. alcohol; wash in absolute alcohol; follow with xylol; mount in balsam and examine with an oil immersion lens. The appearance of a specimen thus stained is as follows: The protoplasm of leucocytes and other cells takes the eosine stain, as do the red blood cells; the nuclei of cells stain with Loeffler's blue. Eosinophiles appear as in stained blood preparations. Gram staining organisms appear black or deep violet, while gram-decolorizing bacteria take the Loeffler's blue stain. Capsules about organisms are stained by the eosine as are ciliæ. Smith describes the appearance of sputum in pneumococcus infection of the respiratory tract, as well as the findings in cases of influenza. The influenza bacillus may appear as a secondary invader in pneumococcus pneumonia or in early or late phthisis; it may be present and persist for years in chronic bronchitis. Influenza bacilli appear in the stained specimen as minute bacilli taking the Loeffler's blue stain (therefore gram-decolorizing), frequently crowding the protoplasm of the leucocytes or lying outside the cells, in large numbers. They vary greatly in number from day to day; a single negative examination is not sufficient. Streptococci may be present in the saliva in small numbers in health. In the sputum they exist frequently as secondary invaders, in association with the pneumococcus or with influenza bacillus. They, as well as staphylococci, may be present in large numbers in broncho-pneumonia or pulmonary abscess. An organism rarely found in sputum is *Bacillus mucosus capsulatus.* Occasionally pseudo-pneumococcus is found in pneumonia or acute bronchitis; the cocci resemble closely streptococcus and at times pneumococcus. In the routine examination of sputum several specimens should first be stained by the usual methods and examined for tubercle bacilli. If no tubercle bacilli are found another specimen should be stained as above described. Finally, for the proper identification of organisms in sputum, isolation may be necessary. Smith illustrates the clinical value of sputum examination by citing a series of cases.

The Hanging-drop Method.—The employment of this method in the study of hemoprecipitins is of great advantage, especially for medico-legal purposes. A. ROBIN (Phil. Med. Jour., Dec. 20, 1902) in the course of experimentation on specific antiserum for the detection of human blood, found that a marked deterioration in specificity had taken place after four weeks,—the reaction which had been noted within thirty minutes now took over two hours. It then occurred to the author to apply the hanging-drop method in the hope of observing the reaction at a stage when it could not be appreciated microscopically. Accordingly, well-diluted human and calf's blood was examined in a hanging drop and found clear. A loopful of antiserum was added to each, and the slide placed in an incubator. Frequent microscopical observations showed at the end of ten minutes a number of refractive granules in the drop of human blood, which became more marked five minutes later, resembling the Widal reaction, except for the bacilli. The control drop of calf's blood remained clear. The advantages of the method are its shorter duration, greater accuracy under the microscope and necessity of only minute quantities of blood. The agglutination phenomenon seems to show that the antiserum contains beside the specific precipitins, also agglutinins, which act on the granules of the precipitate as they do on bacteria.

Condition of the Pancreas in Cirrhosis of the Liver.—A study of the anatomical structure of the pancreas in twelve cases of hepatic cirrhosis, conducted by F. STEINHAUS (Deutsch. Arch. f. klin. Med., Vol. 74, Nos. 5 and 6), showed an inflammatory proliferation of the interstitial tissue, very similar to the process in the liver itself in all but one case of Laennec's cirrhosis. The changes were in part perilobular, in part also periacinous, with considerable destruction of gland tissue. Besides this there was a small-celled, lymphocytic infiltration with new formation of capillaries and excretory ducts. The cells of Langerhans suffered no change. The diminished tolerance which patients suffering from cirrhosis of the liver show for sugar is probably due to these changes in the pancreas, just as genuine diabetes in cirrhosis of the liver, with or without hemochromatosis, is dependent upon changes in this organ, where diabetes is absent, it is probable that sufficient functioning pancreatic tissue is still present.

Changes in the Blood After Venesection.—After a sufficiently large amount of blood is drawn from the veins, H. v. HOESSLIN (Deutsch. Arch. f. klin. Med., Vol. 74, Nos. 5 and 6) finds that the freezing point of the blood at first is higher, but soon reaches the normal and is lower if the venesections are repeated. The changes in the amount of albumin are not proportionate to the variations of the freezing-point, since there is a constant fall. This stands in relation with the amount of hemoglobin and the number of red cells, which also diminish gradually. The peculiar behavior of the osmotic pressure and the percentage of albumin is probably to be explained by a diffusion of fluids rich in salts and poor in albumin, from the tissues, when a certain amount of blood is taken from the vessels.

Pathology of the Tissue Changes Induced by X-rays.—The therapeutic efficacy of the X-ray has been demonstrated in hundreds of cases, but few examinations have been made of the changes which take place in the tissues. A. G. ELLIS (Proc. of Path. Soc. of Phil., Dec., 1902) has studied four cases of malignant tumor, which were subsequently removed by operation, with the following results: There was found (1) necrosis of cell and trabeculæ of varying degree; (2) increase of elastic tissue; (3) fewer areas of lymphocytic infiltration; (4) a tendency to occlusion of vessels by deposits on their inner surface; (5) practically entire absence of infiltration of polynuclear leucocytes. Conclusions are hardly warranted by these results, especially as further studies are made with reference to nerve changes. A few thoughts, however, suggest themselves: (1) Some lay great stress on the blood-vessel changes as a cause of necrosis. While endarteritis is probably induced by the X-ray, the accompanying tissue necrosis seems out of proportion to the vessel-changes, suggesting the possibility of these being *pari passu* results of the same influence instead of cause and effect. (2) The pressure of immense numbers of cocci and bacilli in one case after a twenty-minutes' exposure would argue against any bactericidal effect. (3) The unsatisfactory clinical results as well as the slight microscopical changes of another case can be safely attributed to the presence of a large number of pearls. This emphasizes the necessity of curetting or cutting away diseased tissue before instituting treatment.

THERAPEUTICS.

Arsenic in the Treatment of Tuberculosis.—As the question of the use of arsenic in the treatment of tuberculosis has recently been revived, CYBULSKI (Przeglad lekarski, No. 36, 1902) conducted a series of experiments concerning the effect of hypodermatic injections of arsenic in tuberculous patients at Dr. Brehmer's sanatorium at Görbersdorf. He picked out patients in whom local improvement was as yet possible, and to verify the effect of the remedy on the temperature, febrile cases were selected. The following solution for infection was employed:

Sodii arsen.	0.2
Solut. ac. carb., ½ per cent.	20.0

The initial dose injected was 0.1 of a Pravaz syringe, increased at first daily by 0.1, and then every second day, so that by the end of two weeks a syringeful was injected. Every patient was given about 20 injections. In cases with favorable results, the injections were resumed in two to three weeks in the previous order. The injections are but slightly painful, but care must be taken that the solution be warm. Ecchymoses at the injected spots were rather rare. The author draws the following conclusions as a result of his investigations; (1) The above described method of employing arsenic very often influences favorably the febrile condition, although the effect is rather short in duration; (2) the patients took on some weight; (3) the appetite improved. To effect this, arsenic is given per mouth, as its immediate contact with the mucous membrane of the stomach causes irritation of the same; (4) the patients always felt better in a general way; (5) diarrhea, so common after the use of arsenic, was never seen in any of the cases; (6) the evening sweating was often influenced favorably; (7) albuminuria was never observed; (8) there was no direct effect on cardiac activity. The diminished frequency of the pulse is to be ascribed to the lowering of the body temperature; (9) arsenic exerts evidently no effect on the pulmonary process.

Treatment of Glycosuria and Diabetes Mellitus with Aspirin.—Aspirin is a salicylate compound which is said to decompose only when it reaches the small intestine. It is also claimed for the drug that it does not produce the toxic symptoms often seen after the exhibition of sodium salicylate. R. T. WILLIAMSON (Brit. Med. Jour., Dec. 27, 1902) gives a further report on its use in over 40 cases of chronic glycosuria and diabetes. Three or four years ago he had used the drug, but in small doses. He has recently, however, come to the conclusion that in order to get effects from it, it is necessary to give the maximum dose. The cases upon which he made his observations were as far as possible chosen for the absence of complications, such as phthisis, nephritis or very advanced cases of diabetes. From a series of carefully tabulated observations he concludes that when aspirin was given the sugar excretion was diminished. When the aspirin was discontinued, it increased. This could be noticed again and again in the same patient, and in the absence of any unusual dietetic limitations, all cases having been put upon ordinary ward diet, there seemed to the author to be but one conclusion possible, viz.: that the drug has a distinct value. It has the most influence in the less severe forms of diabetes and in older people. In the young, unfortunately, it often produces little or no change. So far as the advantages which it has been thought might accrue from the alternate use of aspirin and sodium salicylate in the same case, he believes that the one is as potent as the other in reducing the sugar output, the only advantage of aspirin being that it is tolerated better by some patients than by others.

A Serum to Counteract Morphine Poisoning and Similar Intoxications.—Ehrlich declares categorically that there can be no such thing as an antitoxic serum which will counteract alkaloidal poisons. Faust, however, in endeavoring to discover the meaning of the toleration for large quantities of morphine, which is notoriously acquired by regular users of the drug, showed that while in acute morphine poisoning three-fifths of the quantity ingested can be recovered in the feces, in chronic poisoning only the slightest traces of the alkaloid are eliminated in the fecal discharges. Since practically no morphine is found in the blood or urine, it is obvious that the chronic use of large quantities of morphine results in the introduction of new factors which are capable of destroying and counteracting morphine in the system. L. HIRSCHLAFF (Berl. klin. Woch., Dec. 8, 1900) has undertaken to produce a protective serum to counteract morphine and other alkaloidal poisoning. Dogs were subjected to morphine injections for periods varying from three weeks to five months. Serum recovered from animals so treated was found to possess life-saving power against fatal doses of morphine administered to puppies and mice. Hirschlaff believes that his serum will prove to be of value in acute morphine poisoning in human beings. The dose to be used in such cases cannot be theoretically determined, as the susceptibility of human beings to morphine is absolutely and relatively different from the susceptibility of animals. Reckoned by bodyweight, the human being is 70 times more susceptible to morphine than the puppy and 130 times more susceptible than the mouse. In one case only has the author had an opportunity to test his serum clinically, and the results in this case were most encouraging, but not conclusive inasmuch as the dose of opium taken was not definitely known, nor was the treatment limited to the injection of the antitoxic serum.

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SATURDAY, JANUARY 31, 1903.

MEDICAL SOCIETY OF THE STATE OF NEW YORK.

THE ninety-seventh annual meeting of the Medical Society of the State of New York was held on Tuesday, Wednesday and Thursday of this week, and an account of the proceedings of its first two days will be found in our columns (page 228). Approaching its centenary (a committee was actually appointed at this meeting to begin preparations for the celebration of the hundredth anniversary of its foundation in 1806), the Society is still vigorous, and its well-attended sessions attest the interest of members not from any one or a few localities, but from all over the State. The committee of arrangements had amply fulfilled its duty in the interesting program provided, and this must be set down as one of the most successful meetings the organization has ever held.

The scientific business included two special features of great practical interest,—a symposium on Hematology and another on Arterio-sclerosis. The papers on Eosinophilia and Degeneration of the Erythrocyte attracted particular attention. The significance of an increase in the number of eosinophiles has been worked out, especially here in America, and the story of it and of its confirmation by others is always new to American physicians. The fact that after so long and disappointing a search that the red-blood cell seems about to yield up the secret of its pathological processes was another point of special interest. When microscopical hematology was begun it was hoped above all that the mysteries of the red cells, their behavior in health and disease, would be elucidated. Instead it was the white cell that proved approachable. At last, however, certain pathological features of the red cell are coming into prominence. Granulo-basophilia, with its relation to lead-poisoning, and still more to the ingestion of iron, is a promising chapter in hematology, whose end it is not easy to foresee.

The symposium on Arterio-sclerosis, while necessarily indefinite from the state of the subject, shows very well how much has been learned about affections of arteries in late years. It would be hard to imagine a society of practitioners a few years ago occupying itself for a whole afternoon with the subject of sclerotic degeneration of arteries. Yet on this occasion the feeling was general that though many excellent practical points had been brought out, the subject was by no means exhausted. The relations of arterio-sclerosis to the prognosis of all disease and especially the infectious processes, was dwelt on in a way that shows how much the general practitioner now considers the individual patient and what he brings with him into the disease rather than the disease itself.

Besides the scientific business the most important part of the program was the discussion of the subject of the union of the two medical organizations now existing in New York. The report of the committee will be published in full in our columns next week. It was decided that until the American Medical Association at its next meeting, to be held at New Orleans in May, shall take action on the obligation of the code of medical ethics as formally formulated, the Medical Society of New York must wait, since it is for this matter that separation originally took place. Furthermore, the Medical Society feels that its ninety-seven years of uninterrupted activity makes it incumbent upon it not to sever its connection with an historic past, especially as there are good legal opinions that the Medical Society can accomplish all its purposes under its present charter. The committee is continued with power, having only reported progress, and the outcome must be left to the meeting of the National Association and its formal declaration as to the uncertain question of the code. While the Society thoroughly approved of the action of its committee, it was easy to see that the sentiment of the members is for union as soon as possible consonant with dignity and a proper conservatism. This sentiment was well voiced in the President's address, most of which was given up to pointing out the benefits that would flow from a thoroughly united medical profession in this State and country.

THE USEFULNESS OF CONSCIOUSNESS.

The presidential address delivered by Professor C. S. Minot before the American Association for the Advancement of Science at its last meeting more than merits the acquaintance of medical scientists and especially of physiologists and biologists generally. The address dealt with the biological relations of consciousness. For vigor and simplicity of statement of a complex problem it has seldom been excelled, while its solution of the problem, though by no means new, can scarce fail to be satisfactory to most of those who, having understanding, do not refuse to use it.

Two general topics were discussed in this timely paper, the philosophical basis of common sense dualism as opposed, successfully, thinks Minot, to monism, and, second, the bionomical or ecological relations of consciousness. It is only with the latter aspect of the address that we are here concerned. Despite the virtual materialism of many biologists as scientists, consciousness has usefulness in the biological and evolving scheme of things, as Minot well makes out. It is at any rate gratifying to have so competent a biologist so vigorously proclaim the gospel from so high a place, and with such deep real learning and good sense.

The burden of this doctrine is that consciousness is a true cause which directly influences, in all animal life, the physiological process. It is emphatically not then an epiphenomenon, not at all an unessential and, as it were, chance, property of the brain "no more requiring explanation than the aquosity of water," but rather a greatly important concomitant of all physiological events. In a concise formula the function of consciousness is deemed to be "to dislocate in time the reactions from sensations," that is to exercise a selective control as to the time when a reaction shall occur from any stimulus. Thus consciousness may (1) stop a reaction or (2) evoke one from a remembered sensation, its stimulus, and combine it with sensations received at other times. It does this for the purpose of the better adapting the psychophysical organism to its environment, thus making it all the better servant of the personality it serves. Thus consciousness is an eminently teleological somewhat, for while without it reaction might follow stimulation directly in a more or less mechanical way and so the animal body carry out its purposes solely by physical law, still the interpolation of consciousness between stimulus and reaction makes possible a much higher order of adjustment—the sort of useful adjustment in fact which would lead to constant improvement, in short to evolution. Evolution, the unswerving purpose of the universe, is the consequence of this finer adjustment which is only possible through consciousness.

Indeed the supremely dominant agency in evolution is consciousness, and without it in animals from monad to man evolution had been unaccomplished. Consciousness was developed for this end, and in man it serves its purpose with vastly increased speed and vigor.

Consciousness ought to be regarded as a biological phenomenon, which the biologist has to investigate in order to increase the number of verifiable data concerning it. In that way, rather than by speculative thought, is the problem of consciousness to be solved, and it is precisely because biologists are beginning to study consciousness that it is becoming the newest problem of science. "The thought which I wish to emphasize," says Minot, "is the importance for the future investigation of consciousness of separating the study of what it does from the study of what it is. The latter study is recondite, metaphysical, and carries us far beyond the limits of verifiable human knowledge. The former study is open to us and opens opportunities to science, but it has hitherto been almost completely neglected. Biology has now to redeem itself by effectual researches on consciousness. On the adequate prosecution of such researches we base great hopes."

This opinion certainly is in the very vanguard of the advancing spirit of the times. Too long already has a one-sided somatism dominated the biology of modern science: for life is fire as well as clay, and fire which burns its reality and its preeminent meaning into the universe.

A HOSPITAL FOR NERVOUS DISEASES.

At varying intervals complaints are made that New York has too many hospitals. A careful survey must however convince the most sceptical that this is not the case. In point of fact, it stands in need of many more, particularly special hospitals, and in this respect the absence of a neurological hospital is most in evidence, as Dr. Clark points out in the current number of the NEWS.

The inadequacy of the dispensary diagnosis and treatment is well known. The differential diagnosis of nervous diseases in which two or more systems and tracts of the cord are involved and whose anatomical integrity and definite function are still obscure is difficult in the extreme. While our knowledge of cerebral localization is quite sufficient for diagnosis of the strictly motor areas, involvement of other areas does not permit of accurate diagnosis. Indeed, it is next to impossible if not aided by prolonged trained and skilled observation. Nor, indeed, is this all, our future progress in neurological therapeutics must be very slow if careful record cannot be made of all rules of treatment carried out under definite conditions in hospital wards.

The rôle which autotoxis plays in modern neurological medicine suggests the thorough employment of physiological therapeutics, hydropathy, dietetics, massage and systematic exercises which can only be successfully inaugurated in a neurological hospital properly equipped. Neurological and psychiatric teaching, and especially the latter, is still very defective in this country and must remain largely so until adequate means are provided for detailed bedside instruction to medical students. Wards of this character would afford excellent teaching facilities and also opportunities for practical researches along all neurological lines. Surely the city hospital authorities should make early and ample provision in special wards or hospitals for the rapidly increasing diseases of the nervous system.

REPORT OF TRUSTEES OF BELLEVUE AND ALLIED HOSPITALS.

A YOUNG Dutch surgeon who had come from the old Amsterdam to the new exclaimed, not long ago, "We old Dutchmen have to come to New Amsterdam to see *real old* hospitals!" What intelligent defense could his guide make to the merry gibes of the visitor as he pointed with visible glee at the too-familiar deficiencies of our archaic almshouse hospital and congratulated himself that the old world knew none such. True, it might have been whispered to him that, had he wished to see true barbarism in hospital administration he should have been here in the good old days of sixty years ago. Bellevue was crowded with typhus cases. One night in the dead of winter a frightful blizzard broke over the city. In the gray of the morning, so soon as he could force a path to the hospital and full of foreboding the great Dr. Metcalf climbed the creaking stairs to the attic ward. What horrid sight greeted his eyes! Where ten patients had lain the day before, now in seven beds he beheld seven corpses, three lying naked on the floor. In the remaining three lay snoring the workhouse nurses reeking drunk from the whisky which Metcalf had prescribed the night before! Through the ill-stopped roof the fleecy snow still poured, sifting in great drifts over the floor and mantling in their very beds the cold, frozen faces of the dead. That truly was a different and a sadder Bellevue than even the hospital of our day!

It is a sincere pleasure to every citizen who has at heart the welfare of the masses and who has justifiable pride in the great buildings dedicated by private funds to altruism to know that, barring politics, he will soon no longer be ashamed of the kindred city institutions. The report of the President of the Board of Trustees for the three months ending Sept. 30, 1902, is as full of interest as of promise.

Much of this report is concerned with detailing the advances which have been made at Bellevue, at Gouverneur, at Harlem and Fordham, in the administration of the institution *menage.* All these efforts are most praiseworthy.

There is evidenced throughout the report a desire on the part of the Trustees to recognize the House Staff. These young men have previously been shamefully neglected.

There are two very important regulations cited, the effect of which will be noted with interest by all. The first, bearing on the transfer of patients from hospital to hospital *only* with suitable and full history, is a reform which, it is to be hoped, has come to stay. Outrageous accidents due to lack of proper information have in the past caused many deaths. Of the second, one can but feel that its wisdom has yet to be proved. It puts the interne of experience on the tail-board of the ambulance and in the admitting room; the man of least experience taking his place in the ward and at operations. What success will attend this move remains to be seen.

The report further shows that the Trustees appreciate the greater ability of women over men in the nursing department and the encroachment of the female nursing staff on the male seems to augur a general transplantation, such as has been so happily accomplished at the City Hospital.

The positions of Examiners of Lunacy have been abolished: an additional resident alienist has been engaged from the State Hospital, so that great improvement is to be looked for in this department. Incidentally this has effected a saving of $400. It is gratifying to know that after so many years the city is coming to its own and that the building within the yard, so long subverted to a private organization is to be used for the housing of the women employes of the hospital.

Altogether, there is much praise and little adverse criticism to be given to this progressive report.

ECHOES AND NEWS.

NEW YORK.

New York State Medical Society.—The following officers were elected for 1903: President, A. T. Bristow, of Brooklyn; Vice-President, A. B. Angell, of Rochester; Secretary, F. C. Curtis, of Albany; Treasurer, O. D. Ball, of Albany.

Department of Health Notice.—The Board of Health desires to call the attention of physicians to the following resolutions whch have been recently adopted: That all public institutions, hospitals, homes, asylums, etc., be required to report all cases of malarial fever which come under their observation, giving the name, age, sex, occupation and present address of the patient, and also information as to whether the attack is a primary infection or relapse, and the address where the disease was probably contracted. That all physicians in the City of New York be requested to furnish similar information in regard to patients suffering from malarial fever under their care. That all physicians be required to report all cases of acute and chronic ophthalmia (trachoma) and pertussis (whooping cough) and to furnish such information regarding them as is required in other forms of contagious disease.

Appointment of Dr. LaFetra.—Dr. L. E. LaFetra has been appointed Chief of Clinic to the Department of Diseases of Children, Vanderbilt Clinic, Columbia University.

Manhattan Dermatological Society.—Regular monthly meeting held on Friday, Jan. 2, 1903. Dr. I. P. Oberndorfer with Dr. Ludwig Weiss presiding. Dr. W. S. Gottheil presented a woman who shows patches of redness, scratch marks, weeping, induration and lichenization, confined to the nates and gluteal regions, on the lower limbs under the breasts and at nape of neck. Process extended over a period of eight years and in spite of all methods of treatment never got well; itching is a prominent symptom; patches vary in size from four inches square to one foot and larger in diameter. Condition had been diagnosed by previous observer as a pityriasis rubra; Dr. Gottheil calls it a chronic indurated eczema. Dr. Abrahams would call it a parasitic eczema, owing to its circumscribed appearance; he recommended 50-per-cent. solution of nitrate of silver locally and followed by soothing applications. Dr. Bleiman and Oberndorfer believe the eruption dependent upon some constitutional diathesis probably gouty, and advise treatment of that condition primarily and locally, to allay subjective symptoms. Dr. Geyser believed the X-ray would influence symptoms. Dr. Sobel advised internal medication and locally formalin diluted one-quarter in preference to silver. Dr. Pisko thinks gout the underlying factor; nitrate of silver in milder strengths; he spoke highly of Burrows' solution; gouty eczemas were always obstinate to treatment. Dr. L. Weiss also recommended soothing applications; also mys. diachylon to induce softening of indurated patches. Internally phosphate of soda. He also stated that the process as shown suggested to him a condition termed lichen cornea.

Dr. Geyser showed a child of eight years, to illustrate the early age at which the eruption of psoriasis may be observed in children; in this case eruption first observed at age of five years. Dr. Pisko saw a case at the age of three years and Dr. Abrahams one at six months.

Dr. I. P. Oberndorfer presented a male of thirty years. A hard mass in body of penis just behind the glans, about 2½ inches square; although hard to the touch, a feeling of fluctuation was apparent; a few fistulous openings along under surface of penis, and discharging sero-mucus and pus were seen; a similar discharge per urethra; since establishment of discharge, mass somewhat reduced in size. Patient gives no history of gonorrhea or syphilis. Dr. Oberndorfer regards the case as multiple gumma of corpora cavernosa. Dr. L. Weiss agrees with the diagnosis but called attention to the possibility of it being sarcoma. Dr. Kinch observing inguinal and cervical adenitis also alopecia, believes it to be syphilis. Dr. Gottheil agrees with Dr. Oberndorfer; absence of history not to be relied upon. Drs. Pisko and Abrahams recommend thorough antispecific treatment as a diagnostic measure.

Dr. W. S. Gottheil presents a woman with a patch, pinkish red in appearance at nape of neck; there is some thickening of skin but no scaling; of two years' duration and never changed in appearance during this time. This patch Dr. Gottheil calls chronic psoriasis. Drs. Pisko and Weiss also regard it as a psoriasis; Dr. Abrahams as seborrheal eczema.

Dr. R. Abrahams shows his case of diffuse scleroderma presented at October meeting. Patient on thyroid; began with gr. i. t.i.d. and increased to gr. v. t.i.d. with $^1/_{30}$ gr. strychnine to counteract cardiac depression. Result shows improvement.

Dr. J. Sobel also presents for the second time his case of tuberculous epididymitis and orchitis; since last observed (October meeting) the swelling has increased in size until fistulous openings in scrotum were established; discharge muco-purulent; there is difficulty in urinating and the act is painful; digital examination reveals sensitive and enlarged prostate. Lungs and other internal organs apparently normal Dr. Sobel believes the condition an ascending tuberculosis beginning in the epididymis; examination of discharge failed to show any tuberc. bacilli.

PHILADELPHIA.

Banquet of College of Physicians.—One of the series of social functions provided for by the S. Weir Mitchell entertainment fund was held January 24 when members of the College of Physicians and distinguished guests from other cities dined at the Hotel Walton. Dr. J. Chalmers Da Costa presided, calling first on Dr. H. C. Wood, the President, who responded to the toast "The College." Several other speeches were made. Among the guests were Drs. Jacobi and Janeway of New York; Drs. Stiles and Wiley of Washington, and Drs. Cushing, Thayer, and Randolph of Baltimore.

Gift to the Presbyterian Hospital.—A donation of $30,000, from an unknown donor, to be used for the erection of a new maternity department was received at the recent meeting of the Board of Trustees of the Presbyterian Hospital. The women of the Presbyterian Churches in Philadelphia have started a fund for the endowment of the building.

Temporary Quarters for Phipps Institute.—The property at 238 Pine street has been leased by Dr. Lawrence F. Flick as the temporary quarters of the Phipps Institute for the treatment of tuberculosis. The building is 26 by 125 feet and four stories high. Offices, clinic, and a laboratory will be installed on the first floor and the three upper floors converted into wards. The capacity will be about 50 beds. Two bills to allow the erection of the Institute in the city are now before the Legislature.

The Carnegie Donation to College of Physicians.—Through the efforts of Dr. S. Weir Mitchell, Mr. Andrew Carnegie has signified his willingness to contribute $50,000 to the Philadelphia College of Physicians so soon as a like amount is raised by the College. Toward this amount $18,000 have already been subscribed and as no time limit has been placed by Mr. Carnegie, the remainder is assured. The entire fund is to be expended in improving the library which is outgrowing its present accommodations. This means extensive alterations in the present building or even the erection of a new building on another site.

Proposed Amendment to the Law Governing the Practice of Medicine in Pennsylvania.—Physicians in Pennsylvania are asked to write at once to their Representatives and Senators, urging the passage of the bill to regulate the practice of medicine that will soon be introduced. The bill is in the form of an amendment to the present law which it changes as follows: In the sentence reading "No person shall enter upon or continue in the practice of medicine or surgery in the state of Pennsylvania * * * unless he or she shall have complied with provisions of this act, etc.," there is inserted, in the space indicated, this clause, "or enter upon or continue in the treatment of any person sick or afflicted by the use of any medicine or by the use of any other means or agency whatsoever, either for a valuable consideration or without any charge or remuneration therefor." The punishment for violation of the law is changed from "a fine of not more than $500" to "a fine of not less than $200 nor more than $500 for each offense, and undergo an imprisonment of not less than thirty days nor more than six months in the county jail." The same bill also changes the time required in medical colleges from three to four years.

Symposium on Serpent Venom.—The annual symposium of the Pathological Society was held January 22, the subject being "Serpent Venom." The first speaker was Dr. S. Weir Mitchell who gave a brief "History of the Investigation of Snake Venom." Dr. Mitchell stated that no work of importance on the action of venom appeared before the year 1857 though some desultory work along that line had been done before. He himself was the first to take up the subject with any degree of thoroughness and he studied it for a period of three years. That study settled many questions regarding the physiology of venom and its action in a manner that has held to the present time. The Civil War then interrupted the study. In 1868 he again took up the investigation and found, among other things, that serpent venom was harmless when ingested, that serpents were not able to kill themselves with their venom, and that venom was capable of causing the agglutination of blood corpuscles. Other work then crowded this aside for some years until in 1881 the resumption of the investigation was brought about by a psychological event that Dr. Mitchell has never been able to explain. One evening while waiting at the door of a friend's house he glanced at the door mat which had a frayed edge. One strand had assumed the shape of a coiled serpent. As he saw this there suddenly came to his mind the thought that venom was double instead of being a single substance. He suggested this to Dr. Reichert of the University and five months' work together proved the hypothesis to be correct. The result of that study was really the key to the present knowledge of albuminous poisons. Some of the phenomena of the effect of venom on the blood were also determined. In 1899 further studies regarding the blood changes induced by venom were made. Two years ago, at Dr. Mitchell's suggestion, the work was taken up by Dr. Flexner.

Venene and Anti-Venene.—Dr. Joseph McFarland presented a communication on the above subject, stating that his researches were stimulated by the work of Calmette and other observers. He began by repeating the work of Calmette but found that he was obtaining but slight results from the work due the fact that venom from the serpents of this country exert comparatively little effect upon the nervous system while locally it is exceedingly destructive. Accordingly he determined to study the local action of venoms, using those from the rattlesnake, moccasin and copperhead. He found these very destructive when injected, the first horse used dying from local lesions, these developing at every point of inoculation. He then introduced the poison into the veins of a second horse in order to dilute it before it reached the tissues. Each injection produced immediate collapse, the horse dropping as if shot. After a short time consciousness would be regained. The animal was finally supported by a sling when the injection was made. Increased dosage finally produced a serum that gave doubtful protection against venom. The horse then contracted pneumonia and died. A third horse was kept alive for fourteen months, its serum finally conferring immunity, unmodified rattlesnake venom having been used. Experiments then proved that this serum was protective against the nerve poison in cobra and rattlesnake venom but would not protect against the local effects of rattlesnake venom. At this stage the horse died from the effects of a local lesion caused by accidentally inserting the needle into the sheath instead of the lumen of a vein when injecting venom. The experiments proved too costly to warrant their continuance.

The Effect of Serpent Venom Upon the Blood.—This phase of the question was discussed by Dr. Simon Flexner who stated that the work done by Dr. Noguchi and himself had been due to the suggestion of Dr. Mitchell who had also furnished much of the necessary financial aid to carry on the investigations. The subject has been studied continuously for more than two years, many of the results having been published. The idea had been to attack the subject along the lines of immunity, first determining the changes in the blood produced by venom and then interpreting them. Very soon the amboceptor or intermediary nature of venom was demonstrated. Then came the fact that the agglutinating principle of venom is independent of the hemolytic principle, the latter probably being the toxic constituent. Efforts were then made to separate the poisons that act on the nervous system. This led to the demonstration that there are a very large number of special poisons in venom, among them being agglutinin, hemolysin, hemotoxin, and, especially in the cobra, what Dr. Flexner has called neurotoxin. The nature of the poison acting on the vessel walls to cause hemorrhage was another subject of investigation. It was found that there is a solution of a part of the vessel wall, the poison dissolving the endothelial cells. This principle has been called hemorrhagin, which is not a good term, a better one being endotheliolysin or solvent of endothelium. Thus there are in venom principles that have an affinity for nerve cells, for blood cells and for endothelial cells. In fact toxins have been found for practically all of the body cells, there being seemingly no limit in this direction. Experiments to determine the exact action of the special principle on nerve cells gave no results in warm blooded animals and the work was transferred to Wood's Holl where shell fish, principally clams, were used. There it was demonstrated that neurotoxin is a cytolysin that causes solution of nerve cells. The nature of venom in destroying the bactericidal action of the blood has furnished the most recent studies, these having shown that the venom amboceptor fixes the complement of the serum. Venom contains many amboceptors. Dr. Flexner concluded by saying that venom has been shown to contain a large number of principles having different physical actions, but it is hardly possible that they all differ chemically.

CHICAGO.

Officers of the Chicago Society of Internal Medicine.—At the annual meeting of the Chicago Society of Internal Medicine, held Jan. 19, the following officers were elected: President, Dr. Geo. W. Webster; Vice-President, Dr. Robert H. Babcock; Secretary, Dr. Charles H. S. Williamson; Treasurer, Dr. M. L. Goodkind.

A Contribution to the Diagnosis and Treatment of the Surgical Diseases of the Ureter and Kidney.—At a meeting of the Chicago Medical Society, held Jan. 21, Dr. F. Kreissl read a paper on this subject. The first case reported by him was one of hematuria, in which he resorted to nephrotomy. The patient was forty-five years of age. In March, 1902, the patient had hematuria, accompanied with tenesmus at times. Rest in bed for several days reduced the quantity of blood materially, so that the urine sometimes seemed to be almost clear. The hematuria, however, returned soon after the patient was up and about a few hours. Examination revealed the left kidney larger and more resistant than the right one. There was no family history of consumption, malignant growth, or of syphilis or a trauma. From the right ureter clear urine was secreted, while bloody urine escaped from the left side. No. 8 ureteral catheter, French scale, was passed without difficulty into the renal pelvis, and bloody urine collected for examination. The same procedure on the right kidney furnished clear urine. Excluding a gumma of the kidney and essential hematuria, there remained as a more common cause tuberculosis, stone, malignant growth, or nephritis. The result of the examination of both urines was given. In the skiagraph taken the following day a shadow was noticed, the density and position of which might lead one to make a diagnosis of a calculus of the ureter caught at its third narrowing in the bladder wall, but closer study made it evident that the shadow was not a ureteral calculus. The distance of each ureter from the median line was less than one inch. If, in this case, the distinct shadow was a ureteral stone, the author thinks it ought to be about midway between the median line and where it appears on the skiagraph. A second exposure, made four days later, showed the same condition. Inasmuch as he had no difficulty in passing a ureteral catheter up the ureter and obtained bloody urine direct from the renal pelvis, he thought he was justified in eliminating the existence of a stone in the vesical portion of the ureter, or its possible bearing on the hematuria. To ascertain the cause of the hematuria, he made a lumbar incision Oct. 15, and found a very large, congested, cyanotic kidney, but macroscopically nothing pathological on its surface, nor on the cut surface of the parenchyma, in the calices, or the renal pelvis. A good-sized elastic bougie was easily passed down the ureter into the bladder, without encountering an obstruction. The urine was closely inspected for three weeks following the operation, but no concrement found, neither could a stone be seen on subsequent cystoscopic inspection of the bladder cavity. Patient has gained in weight since he left the hospital. The urine cleared up during the second week after the nephrotomy, and has remained free from albumin and blood.

Ureteral Calculus.—The second case was interesting on account of the unusual size of the ureteral calculus. The ureteral obstruction was caused by a calculus whose diameters were 1⅛ by ⅞ inches. This case showed to what extent the ureter may be distended by a calculus, and yet urine escaped alongside the partial obstruction, as the author could see through the cystoscope distinct jets of urine emitted at frequent intervals. The peculiar location of the stone in this case renders operation rather difficult. The author states that the perineal route for such cases is not considered a favorable one, and the extraperitoneal route does not give much space to work deep in the pelvis. The transperitoneal method is not without danger, on account of a possible infection. When the patient makes up his mind to undergo an operation, the author proposes, after removing the stone, to pass a ureteral catheter a demeur through the bladder into the renal pelvis, then close, as far as the thin and disintegrated walls will permit, the ureter by Lembert sutures, unite the parietal peritoneum over it, leave a drain in the cavity for quite a while, draining all the urine from this side until the wound in the peritoneum is firmly closed.

Renal Tuberculosis.—The third case was one of renal tuberculosis in a man, forty years of age, who gave a history of repeated attacks of gonorrhea within the past fifteen years. A bacteriological examination of the urine and cultures corroborated the diagnosis. It was impossible to trace positively the source of the infection with tubercle bacilli. Considering the suspicious condition of the right kidney, the author thinks nephrectomy in this case is out of the question. Regarding the treatment employed, after emptying the renal pelvis and irrigating with an oxycyanide of mercury solution through the ureteral catheter, he injected gomenol, and while withdrawing the catheter he deposited some of it in the ureter and bladder. Besides these applications, he injected the oil hypodermatically, after noticing a marked decrease in the number of tubercle bacilli within two weeks. Under this treatment the patient's condition has improved considerably. While the author thinks it would be premature to draw definite conclusions from the few cases in which he has employed gomenol, and without considering it to be a specific for tuberculosis of the urinary tract, he nevertheless believes that it is a remedy capable of effecting good results in bacterial infections of this tract.

A Contribution to the Surgery of the Ureter, with Report of a Case.—Dr. Wm. Cuthbertson read a paper with this title. He stated that ureteral injuries occurred in spite of the most painstaking care on the part of the operator, and its possibility is one of the gravest objections to operating by the vaginal route. In abdominal operations, however, the surgeon can, in the large majority of instances, see what structures he is handling, and even if the ureter is displaced by a new growth, inflammatory products, or is abnormal in its course, it can be recognized and avoided. In vaginal operations the position of the ureters must be taken for granted, unless they have been previously catheterized, and the catheter left in situ, and the operator proceeds, trusting that they may not be injured.

The patient, a woman twenty-six years of age, was admitted to his service at St. Luke's Hospital, July 1, 1902, with a discharge of urine from the vagina. She had had a vaginal hysterectomy and double salpingectomy performed on May 9 previously. As there was a question as to whether she had a vesico-vaginal or a uretero-vaginal fistula, he injected a solution of methylene blue into the bladder and closely watched the fistula to see if any of the solution passed through. As the urine in the vagina remained perfectly clear, vesico-vaginal fistula was excluded. Dr. Kreissl then passed a ureteral catheter. He found it impossible to pass a catheter into the left ureter beyond three-quarters of an inch, while on the right side, a catheter could be inserted up to the kidney. From these results a diagnosis was made of injury to the left ureter. On July 17 Dr. Cuthbertson operated on the patient, assisted by Drs. Kreissl and Watkins, for the purpose of implanting the ureter into the bladder, this procedure being planned on account of the impossibility of passing a catheter beyond the ureteral opening, which indicated that the ureteral injury was near the bladder.

The results of the operation proved (1) the efficiency of silk sutures in holding a shortened ureter in the bladder opening, thus doing away with severing the anterior bladder attachments in certain selected cases; (2) safety and advisability of leaving a ureteral catheter in situ in the operation of ureteral cystostomy.

Streptococcus and Staphylococcus Bronchitis.—At a meeting of the Chicago Society of Internal Medicine, held Jan. 19, Dr. Joseph M. Patton read a paper on this subject. After referring to the unsatisfactory nature of classifications heretofore employed, because of the growing recognition of the importance of micro-organisms as etiological factors in bronchitis, and because of more or less well-defined types of bronchitis resulting from infection by certain organisms. Three case histories, taken from a number of cases, were given by the author to illustrate and support the occurrence of a form of bronchitis due to infection by streptococci or staphylococci, or both, and probably primary, which exhibit more or less characteristic features, and in some cases simulate the early clinical history of tubercular infections.

These cases did not present a history of a primary influenza, but exhibited marked physical signs of local or general bronchitis, with continuous temperature, persistent cough, occasional night sweats, loss of expansion, and in some, modifications of pitch, which might be suggestive. The sputum showed streptococci and staphylococci. In one of the cases cited staphylococci alone were present. No influenza bacilli were present. These cases completely recovered in a few weeks. The subjective symptoms of these cases are, of course, not sufficient for diagnosis. The physical signs may be only suggestive, especially in cases of staphylococcus infection, with lack of sudden onset, a tendency to localization, and the subacute character of the subjective signs, which much resemble the onset of tuberculosis, involving the terminal bronchial tract, the principal difference being the infrequency of apical localization. The two infections, streptococcus and staphylococcus, in their relation as causes for bronchitis, their effects relatively appear to bear much the same relation to each other as do those of pure and mixed tubercular infection in their earlier manifestations. With no intention to discuss the treatment of these forms of bronchitis at this time, he would merely call attention to the unsatisfactory results for the usual sedative or stimulating expectorant treatment, and remark that the best results came from alterative medication, and the use of soothing and stimulating local medication by deep inhalation.

Cockroaches as Conveyers of Typhoid Infection.—Dr. Rosa Engelmann read a paper on this subject. She gave the history of a house epidemic of typhoid fever, which, in the opinion of Dr. Edward F. Wells and herself was spread by cockroaches. She could find no other record of such conveyance in the literature. Flies, mosquitoes, fleas, bedbugs, and cockroaches belong to the same large family and order of insects. All but the cockroach have been demonstrated to be not alone the active or intermediary hosts, but also accidental carriers of various diseases, including typhoid fever and its allied disorder, bubonic plague. In Oct., 1902, on the complaint of Dr. Wells, the essayist was instructed by the Health Department to investigate a house epidemic of typhoid fever which in five months had claimed as many victims in one large, eight flat, well-constructed apartment building. A similar neighboring building, furnished in common with an artesian well water supply, general and janitor service, was and had been free for two years of any sickness. Another peculiarity was the fact that the typhoid cases, with one exception, were confined to the south tier of apartments and occurred in four families. Case I, a severe one, occurred in June. A delicate woman, depressed by sorrow, living in the first lower south flat, succumbed. Hydrox water and Consumers' ice were in use, but raw fruits and vegetables were cleansed in faucet water which was likewise in use for mouth, toilet and bathing purposes. Milk was supplied by the Borden Company. Two nurses and a competent physician were in charge with a consequent attempt at proper disinfection of the discharges. Case II appeared in July in the north lower flat, opposite the first case. A growing lad was the patient. No information as to the domestic life was obtainable, since at the time of her visit the family had moved; hence the excrement of this case may have infected the catch basins. Case III came down with the disease in the south flat, third floor, the first week in August. A child under two years of age was affected and previous to this time had been healthy. It, with its mother, had just returned from a six weeks' sojourn at a Rhode Island sea coast town, which for years had been free from typhoid fever. There was also careless washing of vegetables, etc. Case IV, the mother of the above babe, took sick the first week in October. A good physician and trained nurse were in charge of both cases. Case V, in south flat, fourth floor, was reported by Dr. Wells, Oct. 10. Consumers' ice and hydrox water and Borden milk supplied this family. Faucet water was used for toilet and culinary purposes. This case, like numbers I, III and IV, was in the south tier of flats. Why, with one exception, was the north tier exempt? Cases I and II, in lower south and north flats, were convalescing when the family in the third south flat returned to a home that had been closed and uncared for six weeks, and by this time was overrun with cockroaches. The same conditions existed for a like period in the second floor, south flat, directly over the home of the first patient taken sick. Case V, living on the fourth floor, south flat, complained during the summer to the agents and janitor for relief from a perfect pest of cockroaches. They were on the food and in the beds and all over the drawing room, so that this family were having daily and deadly raids upon these unwelcome invaders which not only permanently installed themselves in every room, but came up in additional hordes in the clothes baskets when brought up from the basement. The place was literally alive with cockroaches. Why was this basement overrun with them, while the neighboring basement was exempt? The people were well and every flat occupied in the second apartment building, while in the first one there was sickness in two families, with consequent neglect of housekeeping. The second closed flats above next became ridden with vermin and communicated this condition to the top flat from which the greatest complaint came and in which the last case of typhoid fever appeared. The etiological incident of the first case is uncertain, although it can probably be ascribed to culinary and toilet use of the city water, that at intervals during the spring and early summer had been turned into the house mains by the janitor when his artesian well-pump broke down. He also at monthly intervals turned on the city water into the tank in order to wash it out, for it was less labor to scrub it with city water than to carry up the artesian water from the pump level to a sixty or seventy foot tank elevation. Not only did the artesian well water become contaminated, but the house mains as well. This state of affairs ceased with the employment of a new janitor later in the summer, who notified tenants when the city water was turned into the house mains. If the infection was due in all these cases to the water supply, why was there no further incident of the disease in the other twelve families, and why was it almost confined to the tier directly over the first case. The artesian well water, freshly pumped, and the tank supply were examined twice in October and found to be free from typhoid germs. The pump connections, piping, and drainage were perfect, as were the plumbing and sewage connections. Upon repeated complaints of the tenants during the summer the catch basins were finally cleaned in the fall, but not probably until after the cockroaches had carried sewage, typhoid infected by Case I, or possibly Case II, to the food supplies of the other afflicted families. By October the vermin were also beginning to be exterminated by the effort of profesional exterminators, and no more cases appeared. During this time the adjacent building had been comparatively free from cockroaches.

Death of Dr. Dickerman.—Dr. Edward T. Dickerman, one of the young ear and throat specialists of this city, died Jan. 23 of pneumonia. He was born in Jacksonville, Ill., in 1867. After graduating from the Chicago Medical School in 1890, he was appointed house officer of Mercy Hospital. Later he went to Europe for study, and on his return he was made Professor of Laryngology and Rhinology in the Chicago Policlinic; also instructor in otology in Rush Medical College, surgeon to the Eye and Ear Infirmary and Assistant Aurist to the Presbyterian Hospital.

CANADA.

Annual Lecture of McGill University.—Dr. T. A. Starkey, the newly-appointed Professor of Hygiene at McGill University, delivered the annual university lecture one afternoon last week to a large audience. He took for his subject "Hygiene," and after devoting some time in the introduction thereof to the work of the late Professor, Dr. Wyatt Johnston, both inside and outside of the university, as well as his work in connection with medico-legal matters, he dealt with his subject proper in three stages. He considered that it is among those nations only which have secured to themselves social progress, general enlightenment and constitutional freedom, especially to the great mass, the working classes, that hygienic reform has made any progress worth speaking of. These three things produced two results: (1) An ever-increasing need for better administration to ensure a more wholesome condition of things in the general surroundings; and (2) a more charitable desire on the part of all to promote the welfare and happiness of our fellow-creatures.

McGill Students Decorate the Monument of Queen Victoria.—The idea of the annual decoration of the monument of the late Queen Victoria in Montreal by the students of the different faculties of McGill University, originated among the students of the medical faculty, who some weeks ago came to the conclusion that they would annually deposit a wreath on the monument to Her Late Majesty. On the afternoon, therefore, of the second anniversary of her death, the undergraduates to the number of 1,100 assembled and marched to Victoria square, where separate wreaths of rare and beautiful flowers were deposited on and around the monument. A large concourse of citizens gathered to view the decoration and the attendant ceremonies.

Laval Medical Students Hold Annual Dinner.—The medical students of Laval University, Montreal, held their annual banquet on Jan. 17. There was a large attendance including many prominent and distinguished citizens of Montreal and the province of Quebec. In replying to the toast to "Our Professors," Sir William Hingston emphasized the importance of medical practitioners being ever ready to cope with any emergencies which might arise in the practice of medicine. At times the whole world had its eyes on the medical profession, and instanced the cases of King Edward and the late President of the United States, William McKinley. All should so prepare themselves that they would be an honor to the profession they were about to enter.

Guarding Against the Plague in British Columbia.—Dr. C. J. Fagan, the secretary of the British Columbia Board of Health, has returned to Victoria from San Francisco, where he was investigating reports in regard to the prevalence there of the bubonic plague. He reports to the British Columbian Government that a force of men is employed at San Francisco in collecting rats, and that rats which have been found dead have shown plague bacilli when examined. He recommends that a strict quarantine be maintained against vessels arriving from San Francisco.

Canadian Quarantine Laws.—Representatives of the Montreal steamboat companies waited on the Minister of Agriculture last week at Ottawa with regard to the quarantine laws on the St. Lawrence, stating that their vessels and passengers were subjected to undue detention, far more so than vessels and passengers arriving at the port of New York. The Minister replied that the regulations on the St. Lawrence and at New York were practically identical, but that he would make inquiries into the administration of the quarantine law at New York; and if improvements could be applied without danger to the public health, they would be done.

GENERAL.

Mississippi Valley Blue Book.—The Mississippi Valley Medical Blue Book, published under the auspices of the Mississippi Valley Medical Association by McDonough & Company, of 715 Locust Street, St. Louis, and 79 Dearborn Street, Chicago, is under process of publication for 1903. The book is free to all members of the Association. It will contain the names of the physicians and their graduation date, of Alabama, Arkansas, Iowa, Illinois, Indiana, Kentucky, Louisiana, Minnesota, Mississippi, Missouri, Tennessee, Wisconsin.

Appointment of Dr. Stewart.—Prof. G. N. Stewart, M.D., Ph.D., professor of physiology in Western Reserve University Medical School of Cleveland, has been appointed professor and head of the department of physiology, to fill the vacancy caused by the resignation of Dr. Jaques Loeb.

The Title of Doctor.—This title is said to have been first conferred by the University of Boulogne in the twelfth century; and the first Doctor of Medicine was G. Gordinio, who received the degree from the College of Aosta in 1220.

Cause of Napoleon's Death.—According to a statement published in the *Gazette Médicale de Paris,* by Dr. Baudouin, Emperor Napoleon's death was due to perforation of a gastric ulcer, rather than from cancer of the stomach, as has been stated.

Cretinism in France.—The number of cretins and idiots in France is estimated at 125,000; and in the eastern provinces the number reaches 32 in 1,000; while those affected with goiter in the same district are 111 in 1,000.

Anesthesia in China.—General anesthesia is said to have been in use among the Chinese as early as the middle of the tenth century. This they effected by inducing absorption of certain narcotic substances, the base of which was opium, aconite, etc. The subject was awakened by causing him to drink salt and water. The application of general anesthesia was, however, limited, as operations were few.

Wholesale Immunization Against the Plague in India.—The government of Punjab has undertaken to immunize 700,000 inhabitants against the plague. It is hoped to accomplish the work within five months; and the laboratory of Bombay has been asked to provide daily, 50,000 doses of antiplague serum to the physicians of Punjab.

Antimalarial Laws in Italy.—A recent governmental decree requires, under penalty of fine, that every employer of laborers in malarial districts, which are more than two kilometers from the residence of a physician, shall be provided with sulphate and hydrochlorate of quinine in sufficient amount for distribution to all his employes in the event of their being affected with malaria. Laws have also been passed which fix a maximum price for the drug, and provide for its distribution by the State.

Syphilitic Infection of Wet-Nurses from Infants.—Something more than a year ago, a Lyons court made a decision holding parents responsible in the event of syphilitic infection of a wet-nurse by their offspring. Following this precedent, the Court of Bourges holds the authorities of the Foundling Asylum responsible for like infection unless the infants are kept under observation a sufficient length of time before giving them to wet-nurses, to establish positively the non-existence of congenital syphilis.

A New Western Sanitarium.—Within a short time construction work is to begin at Point Lóma on what is planned to be perhaps the largest and handsomest sanitarium building in California. A company recently formed is behind the project, and it is the intention to put up a main building that will cost $30,000, and later to construct a number of cottage wards for special diseases of all kinds. The most modern methods are to prevail in the plans for the sanitarium, and no expense will be spared in making the accommodations the best that are obtainable. The success of the project is due to the efforts of Dr. J. C. Hearne, who has been an advocate of such a scheme for a long time, and who has the business and professional ability to carry through the plan.

CORRESPONDENCE.

TRANSACTIONS OF FOREIGN SOCIETIES.

German.

PECULIAR CASE OF NEPHRITIS—CONCERNING AN EPIDEMIC OF SICKNESS CAUSED BY STREPTOCOCCI—OPERATION WITHOUT DIRECT CONTACT WITH THE WOUND—TREATMENT OF EARLY SEPSIS.

MENZER, at the Society of the Charity Physicians in Berlin, Dec. 11, 1902, described a peculiar case of nephritis. The patient died of purulent peritonitis, the cause of which was a purulent infection of the bronchial lymph glands. In both the kidneys and the spleen numerous streptococci were found. The point at issue in the case is, according to the author that these streptococci which reached the kidneys through the blood-current may well have been the cause of the infection of the kidneys. In precisely the same manner he observed streptococci in the urine of a patient suffering with chronic nephritis, after an intense attack of scarlet fever. The same author also reported a remarkable example of an excretion of streptococci through the urine. The patient was a pregnant woman presenting edema and albuminuria; the child within her was dead. During the delivery of this child she had eclamptic seizures. The streptococci disappeared from the urine at the same time as the albumin.

F. FOERSTER, at the Society of Naturalists and Therapeutists, in Dresden, Oct. 25, 1902, contributed a paper upon an epidemic of sickness caused by streptococci. The epidemic affected seven out of nine individuals in one household, namely, the mother, one very young child, and five older girls, ranging from 5 to 11 years of age. The father and the female cook escaped. It lasted three months, but was followed, after intervals of three and six months respectively, by isolated cases. Altogether there were 18 diseases, of which ten were angina, one a severe coryza, three affections of the lymphatic glands, and four various skin affections. The various patients suffered in different manners. The streptococci, which were inoculated into white mice, did not appear to be very virulent. The epidemic passed through three stages, separated by short intervals. The onset was chiefly as a skin disease, then some invasion of the mucous membrane following in a regular interval. From the peculiarities of this observation, Foerster offers the following seven conclusions: (1) Streptococci may, in man, quite frequently cause epidemic disease; (2) the most frequent form is angina; (3) in certain circumstances, the streptococcus may be passed directly from person to person; (4) the specific virulence of this germ is acquired, apparently, through direct passage from one person to another, among which the most important seems to be the processes in the skin and the lymphatics; (5) personal predisposition does not thoroughly explain these epidemics. The virulence which the germ possesses toward white mice, unfortunately does not give a very definite estimate of its specific poison toward man; (6) the period of incubation in such epidemic attacks in man appears to vary between three and three and a half days; (7) the high degree of intoxication promises great difficulties in controlling such epidemics.

Koenig, at the Medical Society of Berlin, Dec. 10, 1902, discussed the subject of operation without direct manual contact with the wounds. The speaker alluded chiefly to the recent advancement of antisepsis and asepsis, which, nevertheless, in the attempt to render the hands free of pus, had encountered almost insurmountable difficulties. For this reason he had endeavored, latterly, to avoid direct contact between the hands and the wounds, so far as possible. At first he adopted this method in operating on joints, which are so easily infected. Then he extended his precautions to operations upon bones, and employed long instruments for this purpose, instead of his hands. With perseverance, after a little experience, this plan succeeds well, even in such difficult operations as replacement of a displaced semi-lunar cartilage within the knee-joint. If the operation is of the class in which direct contact between the hands and the wound is impossible to avoid, for example, those within the cavity of the abdomen, he, nevertheless, carries out the general plan of instrumental work to the very last limits. In appendicitis, for instance, he has been able to do the entire operation with instruments, in cases coming for intervention during the quiescent interval. The value of this procedure, for both the surgeon and the patient is certainly a very great one. In the first place, the subsequent treatment of the patient is apt to be better; and in the second place, there is very much less danger. Out of 1,000 operations, he has done over 600 in this manner, among which 100 were joint and bone operations. In not one of these 600 cases did he find the least possible disturbance after the operation. He commends most strongly this method of treatment to the practitioner of medicine, whose surgery so often involves treatment of the extremities—that is bone and joint conditions,

Bertelsman, at the Society of Physicians in Berlin, Dec. 2, 1902, read a paper on the early stages of sepsis, with special reference to the bacteriological examination of the blood. This anthor discussed the same subject at the recent Congress of German Surgeons, and more lately, again, in Langenbeck's *Archives of Surgery*. His observations brought forward in this present paper concern all of the various forms of pyogenic infection which, during the past year, had appeared in St. George's Hospital on the surgical side. Of 220 cases altogether, 154 were accepted as being applicable to observation. Of this number, 48 gave a positive condition of the blood. This is a circumstance which the author regards as rather common, not only in true sepsis, as the term is generally accepted, but also in the general pyogenic processes, as usually seen. For instance, in the series of ordinary phlegmonous processes, he was able to discover quantities of streptococci in the blood. In a few instances, many hundreds of colonies were obtained. An interesting fact in this connection is that after the pus was evacuated with a knife, the germs soon disappeared from the blood. Of the 48 patients who gave positive findings in the blood, 20 died. This small mortality the author ascribes to the fact that he was obliged to examine the patients chiefly in the initiatory stage of infection, before really any true sepsis in the clinical sense of the term was present. His summary is that he found in the blood streptococci 28 times, with 9 deaths, or 32 per cent. mortality; staphylococci in 13 persons, with 9 deaths, or 70 per cent. mortality; *Staphylococcus albus* in two individuals, with no deaths; pneumococci in one fatal case; *Bacillus coli commune* in one recovered case; bacillus of syphilitic fever in one favorable case; a mixed infection with urethral fever in two individuals, both of whom died, one by accident and the other in virtue of the infection. The observer concludes from these facts that streptococcic infection may, on the whole, be regarded as better in prognosis than staphylococcic. He acknowledges that herein there is a divergency of opinion from most observations by bacteriologists. From the fact that the germs disappear so promptly, as a rule, from the blood, just as soon as the original focus is evacuated, he concludes that probably the living blood should not be regarded as a good culture-medium for these germs. He offers this, however, as probably an entirely new observation. If one notices the bactericidal power of the blood, he must then admit that in every well-established case of sepsis, using the word in its pure clinical sense, the patient is face to face with a focus all over his body, because the bacteria do not, in fact, breed well in the flowing blood. This theory, however, will necessitate considerable more research. If his findings are correct, there is practically no connection whatever between pyemia and septicemia, as these terms are used clinically. Thrombo-embolic pyemia has been, since the days of the advent of asepsis, more and more rare. While in twenty individuals who died of pyogenic infection, pus was found in the blood before death, it was impossible to find it in 14 victims of peritonitis before death, even in protracted examples of the disease. These patients dying from peritonitis received their disease from unknown sources. He therefore concludes that such cases belong to true toxemia.

SOCIETY PROCEEDINGS.

MEDICAL SOCIETY OF THE STATE OF NEW YORK.

Ninety-seventh Annual Meeting, held at Albany, January 27, 28 and 29, 1903.

First Day—January 27th.

After the President's inaugural address and the reports of Committees of Arrangements, By-Laws and Hygiene, the Committee on Ethics recommended the dropping of two members (Lewis Co.) for unethical conduct. On motion of Dr. D. B. St. John Roosa, the committee on publication was instructed to furnish copies of the transactions of the Society to all regular delegates to the annual meeting. The State Board of Medical Examiners reported that 500 candidates had successfully taken the examination of the regular board of examiners. The proportion of rejections was nearly

18 per cent. Most rejections occurred in pathology and diagnosis. There are in attendance at the medical colleges of this State 248 more students than last year, and about 50 more post-graduate students. The question of making medical examinations of old practitioners from other States somewhat less technical and more practical, so as to facilitate the examination, is under consideration, though at present not legally allowed. The question of bedside examinations is also under consideration. At present the serious difficulty is the revelation of identity of candidates which it involves.

The Committee on Relations of the Medical Society of the State of New York to the National Profession, then reported progress, its report was accepted and the committee continued until after the action of the American Medical Association with regard to the Code of Ethics at its next meeting in May at New Orleans can be learned.

Special Cortical Center for Writing.—The scientific business of the meeting began with the reading of a paper by Dr. Herman C. Gordinier, of Troy, in which he presented arguments for the existence of a separate cortical center for writing. He said that motor aphasia and agraphia do not necessarily occur together. The destruction of Broca's speech center at the posterior part of the third frontal convolution does not necessarily produce loss of power to write. Besides cases of isolated motor agraphia have occurred in which the lesion has been limited to the base of the second frontal convolution, and it is in this part of the brain that the writing center appears to be situated. The power to write is independent of the power to move the hands, for in reported cases where there was complete power to use the hands the faculty of writing was lost.

Clinical Proofs.—Dr. Gordinier said that good authorities in neurology, such as Trousseau and Dejerine, denied the separate existence of speech and writing centers. One of Trousseau's reported cases, however, shows that there is a separation, since aphasia existed without agraphia. Cases reported by Charcot, by Mills and by Banti show the same thing. Some of these patients, unable to talk, carried note books in order to express their ideas. Banti's case at autopsy showed a degeneration of the posterior portion of the third frontal convolution, Broca's region, the pathological condition being limited very closely to this region. Dr. Gordinier has himself had a case in which motor agraphia existed distinct from aphasia. It is sometimes said that agraphia depends on a subcortical lesion of Broca's convolution or the neighboring cortical areas. Drs. Frankel and Onuf showed, however, by an analysis of over 100 cases of aphasia, with and without agraphia, that motor agraphia does not depend on a subcortical lesion. It seems clear then that the center for writing must be considered as distinct from the speech center, both existing in the cortex.

Medical School Inspection, New York City.—Dr. Henrietta Johnston of New York city, said that the introduction of school inspection has shown that schools were used as day nurseries by the poorer classes. Such diseases as chicken-pox, measles and mumps were considered as not requiring segregation, but on the contrary mothers thought, as a rule, that the children would be better taken care of at school than at home. The possibility of the prophylaxis of these diseases has been shown to parents, and the work of inspection has thus had a general sanitary significance. During the first year of school inspection in New York city over 100,000 examinations were made and some 6,000 children excluded from school. It is easy to realize how much contagious disease this probably prevented. During the summer months, so dangerous to child health in large cities, the school inspectors became a board of tenement house visitors. Altogether 30,000 houses were visited and 270,000 families attended. Many minor nuisances were abated and children saved by timely advice.

Eye Diseases and Their Recognition.—Examinations made over a year ago showed that there was a large number of contagious eye diseases among the pupils of the lower East Side schools in New York city. These occurred mainly among Russian Jews, and had been contracted at home and were liable to spread. Later the examination of 60,000 children showed 6,000 with contagious eye diseases, over 1,000 of them in need of immediate operation. These diseases occur much more frequently in boys than in girls. In the last month over 900 fresh cases of contagious eye disease have been reported, showing the necessity for the greatest watchfulness to prevent the spread of the disease. Now school inspectors are instructed to examine especially the children of the primary and kindergarten departments, and to take special note of the condition of the eyes, throat and of the hands. During the existence of the system of school inspection over 2,000,000 children have been examined and 40,000 have been excluded from school for hygienic reasons.

Care of Insanity.—Dr. Charles G. Wagner of Binghamton described the altered conditions for the treatment of the insane that have come in during recent years. Instead of the gloomy prison-like buildings, with the narrow, high-fenced yards, for the patients' airings, known to attendants and patients as the bull-pen, insane asylums now seem more like busy villages. As much liberty as is consonant with safety is allowed the patients. Especially are they given occupations and are tempted into the outer air. It is said that psychiatry has not kept pace with therapeutics in other departments, but fresh air, wholesome food, abundant exercise and encouraging surroundings, without violence, has done much to remove this reproach.

Asylums as Curative Institutions.—The public should now be taught to realize that asylums are not mere places of detention of the insane, but that they are true hospitals in which mental diseases are treated, and cured. If this idea were more prevalent patients would be sent to asylums earlier, where there is more chance of cure, instead of being allowed to waste precious time at home under indifferent treatment. One thing is needed at asylums at the present time. It is a ward or department for acute cases. These, with proper care, could often be sent home cured in a short time. Contact with chronic cases does them harm and may perpetuate their condition.

Psychiatric Wards.—Dr. Floyd S. Crego of Buffalo said, in discussing Dr. Wagner's paper, that all the hospitals of large cities should have special wards for the treatment of acute insanity. These wards exist at the Neues Charité in Berlin, and at the hospital at Heidelberg, where Kraepelin has found them of excellent service. Instead of a mere detention pavilion, as at Bellevue, where patients are kept for five or six days in these institutions patients remain under treatment for months or until it is deemed necessary to transfer them to a county institution.

Dr. Wagner, in closing the discussion, said that undoubtedly there was need of the special departments for acute mental diseases in every hospital. There was even more need, however, under present circumstances, for such wards for acute cases at asylums. The heads of families might by their means often be given back to the support of the families in a comparatively short time.

Spinal Disease Differentiation.—Dr. Floyd S. Crego of Buffalo said that no diseases were so often confounded by the practitioner as those of the spinal cord, and in no class of diseases is recognition more important. For knowledge of spinal diseases the anatomical details of the blood supply to the cord are very important. There is a long, slender anterior spinal artery and two corresponding posterior arteries. As blood-pressure drops very rapidly in a long, thin tube, there are anastomoses all along the spine that reenforce the blood supply. Above the thyroid arteries send branches into the canal and below the lumbar arteries anastomose. Usually the intercostal arteries communicate with the spinal vascular supply. At times, however, these intercostal sources fail, and hence the dorsal region is insufficiently supplied with blood or has no surplus for emergencies. Hence the frequency with which injuries in the dorsal region are followed by true organic change. The spinal arteries themselves anastomose by means of several hundred delicate branches. These are easily injured. Hence the facility with which serious lesions of the cord may occur.

Hysterical and Organic Disease.—Dr. Crego insisted on the necessity for realizing that whenever there was serious injury of the spinal cord or of any part of the nervous system, besides the symptoms due to the actual pathological condition, functional or hysterical symptoms are liable to develop. These greatly obscure diagnosis. The examiner must learn to get below the hysteria to the true state of affairs in the cord, which is often masked. This more than anything else has brought discredit on the science of neurology, for in the examination of persons injured in railroad accidents and the like, when a question of damages is involved, supposed experts differ very much in their estimation of a case. Dr. Crego detailed an experience in which physicians pronounced the condition hysterical, yet when under the influence of hypnotism the patient could not be suggested to move actively. An autopsy six months later showed the case to have been myelitis. Dr. Crego also called attention to the confusion sometimes made between locomotor ataxia and neuritis.

Erythroplœum.—Dr. Reynold Webb Wilcox of New York city summarized the results of 50 observations made with this drug, which is obtained from one of the so-called ordeal barks of South Africa. It has been adopted by the British Pharmacopœia Committee of Conference, and is semi-official in England in a 10-per-cent. solution. The remedy produces a marked rise in blood-pressure and slows the heart, much as digitalis does. It practically represents the therapeutic value of ergot and digitalis. In weak hearts, because of the rise in blood-pressure, it would be contraindicated, but would seem to be best suited for the laboring hearts of stout people, or where with fair compensation digitalis refused to act. Its action is noted three to four hours after its administration, instead of 36 to 48 hours after, as is the case with digitalis.

In answer to a question of Dr. Alfred Mayer of New York, Dr. Wilcox said that the drug can be obtained through any large drug house.

American Climates for the Tuberculous.—Dr. James K. Crook of New York said that we did not need to go outside of our own territories now, in order to find a suitable place for any consumptive. The shore of Long Island, especially Long Beach, Nantucket and Block Island, have a low Summer temperature and not a large range of cold weather in winter. Cold is no longer considered bad for consumptives, and Sullivan County and the Adirondacks in New York State prove very favorable for many consumptives. In our new possessions there is a choice of insular climates that makes selection easy.

The Fire Escape as a Health Resort.—Dr. Alfred Mayer of New York, in discussing Dr. Crook's paper, said that for poor patients, unable to get away from the city, the fire escapes of tenement houses proved an excellent place to recommend to consumptives. He has had some excellent results from all-day life in the open air, even in apparently unfavorable localities. There is a law against it in New York, but the Fire Commissioners said they had nothing to do with it and referred to the Building Department, which also denied any connection with it. Meantime the practitioners among the poor must not forget this means of keeping patients constantly in the open air, which is after all the main feature of the modern treatment of tuberculosis.

Retinoscopy.—Dr. Wiesner of New York city described the use of the retinoscope as a means for calculating the condition of a patient's eyes as regards refraction. The only instrument needed is a piece of mirrored glass with a hole in the middle. The reflection of the light from this mirror on to the pupil gives a distinct reflex. If this light reflex from the cornea moves with the light from the mirror in all meridians, then the eye is hypermetropic. If it moves in the opposite direction, then it is ametropic. If the reflex behaves differently at different meridians, astigmatism is present. The amount of lens that must be placed between the retinoscope and the eye to correct the abnormal movement of the reflex represents the error of refraction. Retinoscopy should never be the sole means of determining refractive errors, but it is a valuable aid to others.

The Ophthalmoscope.—Dr. Francis Valk of New York, set forth the advantages of even a limited use of the ophthalmoscope by the general practitioner. It gives important information with regard to the brain through the optic nerve; with regard to the blood vessels; the general system, since it so often reveals the presence of miliary tubercles or of albuminuric disturbances due to chronic but insidious nephritis.

Treatment of Purulent Conjunctivitis.—Dr. Edgar S. Thomson of New York city said that the first step in the management of a case of purulent conjunctivitis is to decide by the microscope or by culture methods just what bacillus is present. This should not delay treatment, for it is often almost indispensable to begin treatment at once. A delay of even a few hours in gonorrheal ophthalmia may mean the loss of the eye. If the symptoms are those of gonorrheal conjunctivitis abundant creamy pus, intense ecchymosis and discomfort, then a silver salt should be applied at once. In spite of all that has been said recently about newer silver salts, silver nitrate still remains the most efficient for this purpose. It has a special destructive action upon the gonococcus. It should be used in the strength of a 2-per-cent. solution. This should be applied on a swab, every portion of the cul-de-sacs and the palpebral conjunctivæ being reached. Not infrequently the nitrate of silver excites considerable reaction, that for a time apparently increases the secretion. The eye must be kept thoroughly cleansed—washed out every ten minutes, if necessary. For this saturated boric acid solution is the best, not as an antiseptic, but as a nonirritant wash.

Other Silver Salts.—If nitrate of silver proves too irritant, so that the conjunctiva bleeds easily, then a 6-per-cent. solution of protargol may be substituted for it. This may be used also in the milder forms of purulent conjunctivitis, those due to the pneumococcus, to the Koch-Weeks bacillus, etc. These do not as a rule require the severer treatment with nitrate of silver. There are probably no mild cases of gonorrheal conjunctivitis, though they used to be spoken of. It was announced that these newer silver preparations would not stain the conjunctiva, even after prolonged use, but recently some cases to the contrary have been reported. Cold applications are useful in the treatment of purulent conjunctivitis, since it is possible to bring the tissues to a temperature not so favorable to the growth of micro-organisms. For this reason they are better than warm applications, but sometimes these latter will be found more permanently soothing to the patient.

Transportation and the Ophthalmic Referee.—Dr. Justin L. Barnes of New York city read a paper in which he insisted on the necessity for all railroad employes who had to do with signals, and especially engineers, being properly tested by an expert as regards their powers of vision. In the West most of the railroads have a medical expert to whom the question is referred. The Eastern railroads depend on testing by yard-masters and the like. Dr. Barnes pointed out the liability to fallacies of such testing. In cases of central scotomata the applicant may see with the eccentric portions of his retina when his attention is especially directed to an object, though he would miss it by direct vision. Then color-blindness is most illusive. Patients who do not properly recognize colors may be able to judge by quantity of illumination of the color, though at a distance or in foggy or cloudy weather this would be impossible. To risk large numbers of lives in the hands of improperly tested engineers is to court danger, and it will surely result in serious accidents, as the first accident in 1876 which in Sweden called attention to this defect of vision.

Practical Tests.—Dr. Freudenberg of New York city said that engineers objected to the matching of color tests with wool, because they were expected to be able to recognize only four cardinal colors: red, yellow, blue and green. It is the naming of colors that is important for them. Sometimes, as has been shown when men fail to match colored yarns, they yet distinguish lanterns very well. On the other hand the power to match colors does not always give assurance, for at times, after a successful test of this kind, men fail to see lanterns well. It is possible that color-blindness may be relieved to some extent or prevented by training. It is much less frequent now among women than men, and men as the result of color recognition training in schools have less of it than a quarter of a century ago.

Eye-Strain and Headache.—Dr. Lucien Howe of Buffalo explained the origin of the pains that occur with eye-strain. In accommodation for near vision ophthalmologists no longer accept the Helmholtz explanation that the ciliary muscle is relaxed. Observations on the attachment of the suspensory ligament of the lens have shown that it is attached mainly to the posterior portion of the lens capsule, and that during contraction of the ciliary muscle it changes the shape of the lens. This muscular spasm gives rise to the intraocular pain. The accessory muscles are called upon to aid in the muscular effort, and the supraorbital and frontal pain (for some people wrinkle their foreheads in the effort of vision) result. When the frontalis is affected the occipito-frontalis portion of the same muscle is drawn into active sympathetic contractions and this accounts for the pain down the back. The occipito-frontalis and the trapezius muscles are so closely connected that it is not difficult to understand how the trapezius also suffers.

Dr. Valk asked how the contraction of a circular muscle, as the ciliary muscle is, could pull upon the lens. He also asked if there were muscular connections to explain the tired feeling all over, in the back and knees so often when the eyes are overused.

Dr. Howe said that the action of the ciliary muscle is not well understood, but his seems the most rational explanation. Reflexes have been overdone and some would attribute most of the pains and aches of humankind to muscle and eye-strain.

Incomplete Congenital Occlusion of Vagina.—Dr. Samuel M. Brickner of New York city described four cases of transverse congenital occlusion of the vagina above the hymen. He considers that the condition is due to an embryonic fault and to a reversion to an earlier type. Certain animals, as the chimpanzee, so closely related to man, the dugong and the sheep have these vaginal septa normally. Dr. Brickner considers that the septum retains spermatozoa and so makes the animals more liable to pregnancy. One of Dr. Brickner's patients experienced this effect of the septum in her case, as she has had frequent children at short intervals.

Hydrorrhea Profluens.—Dr. Henry D. Ingraham of Buffalo reported two cases of this rare condition, known also as hydrops tubæ profluens. The first patient, married, one child, suffered from gushes of thin, watery fluid which did not stain the napkin. After curettage the thin, watery discharge came on again. Small elastic mass at side of uterus before discharge. The right tube seems enlarged and folded on itself. The second patient, unmarried, school mistress. No leucorrhea. Ten days before menstruation she feels uncomfortably full, then there is a profuse watery discharge to which there is no color and no odor. She estimates the discharge at a quart, and it wets all her clothes.

Vaccine and Vaccination.—Dr. Peter H. Bryce, Secretary of the Provincial Board of Health of Ontario, Canada, gave some scientific and practical details regarding vaccine and vaccination. He said that most of the physicians of the United States and Canada had never seen a case of smallpox until this last few years. Yet the disease was the most frequent and the most fatal of contagious diseases during the eighteenth century. At that time it caused one-tenth of the diseases and spared neither rich nor poor. The cases recently have been so different in certain ways from the classical smallpox that some doubt in the minds of many medical men had arisen whether the disease, brought from Cuba in 1898, and which has spread so widely, is really smallpox. In order to find cases like some of those now seen, it is necessary to go back to the days of Sydenham and Van Swieten. The problem is solved, however, by vaccination. This process proves as distinctly protective against even the anomalous types of the disease as now seen, as against the most classic smallpox.

Vaccination protects absolutely against smallpox for about 10 years. In some persons the period of immunity to the disease after vaccination reaches 20 years. Even then the full measure of protective influence does not expire by limitation, but makes even a subsequent attack of smallpox less severe than it would otherwise be. It is a little difficult to understand then why there should be so much opposition to vaccination. The enactment of the conscience clause in England, the original home of vaccination and usually so conservative in her legislation, is a striking index of this opposition. Dr. Bryce considers that the opposition can be traced to the enforcement of compulsory vaccination. If diphtheria serum were required to be used by law there would inevitably be opposition of the same kind.

Legal Enforcement and its Duties.—Where vaccination is compulsory the government is bound to furnish vaccine of good quality itself, or to see that it can be readily obtained by the people. Many of the difficulties with regard to the employment of vaccine are now being eliminated. At its original introduction Jenner said that the most material indisposition after vaccination is not due to the vaccine primarily, but is due to neglect in its collection or storage or improper application. Now it is clear that he anticipated without knowing the scientific reasons some recent work with regard to secondary infection. Secondary infectious material can be destroyed by glycerinization of the virus. Like every good thing, however, glycerinated virus had a fight for its life. From statements in medical journals at times one might despair of it. Its use will, however, undoubtedly rid the practice of vaccination of most of its dangers. Dr. Bryce suggested that every state that compels vaccination should enact a legal standard for vaccine material and see to its enforcement. Besides this, every municipality should have an official vaccinator, who should be held responsible for the vaccination of all children during the early months. The knowledge and experience thus gained would undoubtedly prove of the greatest service in extending information with regard to the practical side of vaccination.

Sterilized Milk and Clean Milk.—Dr. C. W. M. Brown of Elmira discussed the disadvantages of milk sterilization and pasteurization. Prolonged boiling makes the milk not only less pleasant, but less digestible as well. The secret of milk for infant feeding is to have clean milk at the beginning and then cool it at once to a temperature at which bacteria will not grow. Dr. Jacobi might well say at the last meeting of the American Medical Association at Saratoga that the greatest advance in pediatrics in the last 10 years is the initiation of the movement for clean milk. This requires clean barns and neat farm hands and clean animals. Dr. Brown has found, however, as the result of investigation with a pure milk committee of Elmira that even a town of 40,000 inhabitants can by insistence secure a good, clean milk supply. Sterilization and especially boiling may still have a place, but they must not be depended on as they used to be.

Examination of Milk by the General Practitioner.—Dr. Henry L. K. Shaw of Albany outlined a scheme for a rapid, simple and accurate method of examining either human or cow's milk. The importance of testing the acidity of the milk was dwelt upon. Milk with an acidity over two-tenths of one per cent. is not fit for drinking purposes. The determination can be made either by a simplified titration method or by the use of Farrington's alkaline test tablets. The next step is to obtain the specific gravity. The author had a small Quevenne lactometer constructed with a thermometer. This is graduated from 1020 to 1050 and requires a little over half an ounce for a reading. Lactometers are standardized at 60° F., and the correct reading can easily be obtained when the temperature of the milk is known. The specific gravity of mother's milk averages 1030, and it is lowered by an increase in fat and raised by a high percentage of proteid. If the specific gravity of cow's milk is less than the normal (1029 at 60° F.) one of two things may be assumed. Either the milk contains an unusual amount of cream or the milk has been watered. If, on the other hand, the specific gravity is higher than normal and the percentage of fat is low, it is fair to assume that the milk has been skimmed. The percentage of fat is obtained in many ways, but the writer prefers the Babcock method. The percentage of sugar varies very little and its estimation is not required in an ordinary routine examination. The total solids of the milk can be determined from the corrected specific gravity and the percentage of fat. The Babcock formula consists of dividing the specific gravity of the milk by four and adding to this $\frac{1}{5}$ the per cent. of fat. This will give the solids not fat, and adding the per cent. of fat to this product, the amount of the total solids is obtained. A sliding milk scale has been recommended by Richmond based on this formula. By it the corrected lactometer reading and total solids can be ascertained at a glance without applying any mathematical formulæ. The amount of proteids can be estimated approximately by subtracting the percentages of fat, sugar and salts from the total solids. The Hehner and phlorogluein tests are recommended for the detection of formalin in milk.

Milk and Infection.—Dr. Scott of Niagara Falls in discussing Dr. Brown's paper said that the greatest care is needed to keep milk from becoming a source of infection. There was not long since an epidemic of diphtheria in Niagara Falls, the cases all occurring along the route of a single milkman. Investigation showed that one of the farmers from whom the milkman obtained his milk had had a case of malignant diphtheria in his family. For several days after the child became ill a physician was not called in, and after his diagnosis the cows were sent to a neighboring farmer. In spite of this precaution, eight days later diphtheria began to develop among consumers of the milk. Several other persons in the family had had sore throats before the malignant diphtheria, and it seems not unlikely that these also were diphtheritic. A series of cases of scarlet fever has also developed that is now under observation, and so far it seems possible to trace it to the milk supply.

Simple Technic of Milk Examinations.—Dr. E. E. Smith of New York city said that the use of a 5 to 10 c.c. pipette would simplify the directions suggested by Dr. Shaw for milk examination. A properly corrected urinometer would also serve the purpose of a lactometer, and save an additional instrument. With regard to the proteids of milk their importance must not be immunized. They occur in two forms, casein and albumin. When the casein is in excess the milk is apt to be especially irritating to young stomachs. Even in mother's milk casein, which is much less than that in cows milk, may become increased to an irritant condition.

SYMPOSIUM ON HEMATOLOGY.

Blood Examination in General Practice.—This paper was read by Dr. Irving P. Lyon of Buffalo.

Dr. Lyon described a case in which with acute serous pleurisy there was a very high leucocytosis from the very beginning. Some serum was withdrawn, but little relief followed, and the family was told that probably a central pneumonia was developing. This proved to be the case, although the first signs of the pneumonia did not become manifest until the seventh day. The whole lung then became solidified and the patient died on the 11th day. In a case of supposed puerperal fever the high leucocytosis, with the presence of a positive iodine reaction, led to the suspicion of the presence of abscess. At operation this proved well founded, an abscess being found alongside the uterus. Its evacuation led to the patient's improvement. In a patient who had proved a puzzle to many physicians, occasional chills with high temperature, malaria, appendicitis, and leucemia had been excluded. The boy kept his knee on the left side flexed and drawn up. Movement of the leg caused pain in the left flank. A high leucocytosis consisting mainly of neutrophiles was found and a collection of pus seemed surely to be present somewhere. It was concluded that it must be around the kidney, and as the little patient's health was visibly deteriorating from the infectious process, it was concluded that an exploratory incision should be made. About 2 drams of pus was evacuated from a pocket back of the kidney, and the patient recovered. In a patient who suffered from some of the symptoms of appendicitis the affection improved and operation seemed inadvisable, but the high leucocytosis, consisting mainly of neutrophiles with an intracellular and extracellular iodine reaction, proved a warning signal of danger. At operation a gangrenous appendix just about to rupture was found. Dr. Lyon considers that these cases illustrate how advisable it is to have a routine daily blood examination in connection with other work of a diagnostic nature in all serious cases. In the perforation of typhoid fever, in trichinosis, in animal parasites generally, in malaria almost positive indications of the conditions can be found at once in the blood when all other diagnostic means are at fault.

Significance of Eosinophilia.—Dr. Duncan Bulkeley read the paper of Dr. Thos. Brown of Baltimore on this subject. Normally there are 2 per cent. or slightly more of eosinophiles in the blood. Where they come from is not definitely known. Ehrlich's theory which attributes their presence to the chemotactic influence of toxins in the serum which draws them out of the bone marrow where they seem to exist normally, is the most acceptable. In bronchial asthma, however, and in nasal polypi it is possible that they are formed in situ from neutrophilic leucocytes already present. The granules which take the eosin stain were thought by Ehrlich to be surplus nutriment stored in the cells. This theory has not been controverted, though there are times when eosinophilia is too much of a pathological condition to be merely this. In splenomyelogenous leucemia there is an enormous eosinophilia. In fact this seems to be the differential symptom of the condition. Practically all the intestinal parasites cause eosinophilia, and especially the *Anchylostomum duodenale*. At Johns Hopkins it was shown some years ago that eosinophiles were present in large numbers in the blood of a patient suffering from trichiniasis. Since then this has become a recognized pathognomonic sign of the disease and trichiniasis has been found to occur in mild form much more frequently than used to be thought. In tuberculosis the presence of eosinophilia is said to make for a favorable prognosis. In mild cases of scarlet fever or those with good vitality, eosinophilia is found in the first and second week. By the detection of abundant eosinophiles bronchial asthma may be differentiated from renal or cardiac asthma almost at once, thus saving the physician, patient and family needless disquiet.

Degeneration of Red Blood Cells.—Dr. J. C. Da Costa, Jr., of Philadelphia, read a paper on the present knowledge of the pathology of the red cell in the blood. Besides the differences in color and shape the significance of which is quite well known, there are degenerations of the protoplasm within the cell that have attracted attention. Polychromatophilia, or the taking of stains differently by individual cells, shows variations in the constituents of the red blood cells that always point to some degenerative process at work, although the real significance is not known.

Granulo-basophilia of the red cells is the most important reaction in our knowledge of the pathology of the erythrocyte. It is a reaction to basic stains that shows granules of material near the edge of the cell usually grouped together. It may occur in the portions of protoplasm outside the red cells which are so constantly seen in blood examination, and which correspond more or less to blood platelets. This change in the red cells always has a pathological significance. It has been found by many observers to occur constantly in lead poisoning. In fact, it may be recognized in the blood long before there is any colic, constipation, nervous symptoms, or blue lines on the gums. It has been produced in small animals in 24 hours after the administration of lead acetate. Grawitz kept mice at a temperature above that normal to them and the animals developed this reaction in their red blood cells. Later the animals became accustomed to the high temperature and the granulo-basophilia disappeared. It seems probable that some of the hitherto inexplicable tropical anemias are due to this condition and that one of the secrets of acclimatization is here laid bare. The symptom has been noted also as a sign of latent malaria and as a helpful aid in the diagnosis of sepsis.

Significance of Iodine Reaction.—Dr. Locke of Boston said that if to a thin film of blood there be added a drop of iodine dissolved in solution of iodide of potash under normal conditions all the red cells are stained yellow. Under pathological conditions, however, the color after the application of iodine becomes a copper red. Not only are the red cells thus stained, but also the portions of extra corpuscular protoplasm that occur in blood and probably represent the blood plaques. This reaction has been known for some time, but its exact significance has not yet been decided. Ehrlich who first discovered it thought it due to the presence of glycogen in the red blood cells. Glycogen takes this color from iodine. Certain it is that the presence of the iodine reaction or iodophilia, as it is sometimes called, means that the patient is in a serious condition. It occurs in severe toxemia, in septicemia, in abscesses, from which septic material is being freely absorbed, in empyema, salpingitis, tonsillitis, and impending gangrenous processes in the intestines. It is not a pathognomonic sign of anything special, but it always has a serious significance, and is helpful for differentiation.

SECOND DAY, JANUARY 28TH.

The Surgeon's Enemy—the Skin.—Dr. Robert H. Dawbarn of New York made some practical suggestions with regard to the warfare that must be carried on between the surgeon and the bacteria in the skin. He believes that the surgeon should protect his aseptic patient from himself by gloves and protect himself from the septic or syphilitic patient by the same means. Dr. Dawbarn suggested that gloves may be mended by means of a pyrographic cautery and patches taken from older gloves. For the fingers test tubes are inserted, as in mending stockings, forms are used. For patching the palms pressure is produced by two flat-irons. Gloves thus mended will stand boiling and antiseptic solutions.

Dr. Dawbarn said that the chief danger is from the numberless microorganisms in every drop of sweat and setum. For this the patient must be protected against himself as well as against the surgeon. By rubbing in a combination of some indifferent powder as lycopodium stearate of zinc or talcum with alum in a proportion of 4 to 1, the skin will not allow glandular secretion for some time, so that even in the high temperature of the operating room there will be no sweat for hours. The effect of the astringent is noticeable not only in the skin of the operation site, but also on the surgeon's hands. Prof. Koenig of Berlin has been so much impressed by the dangers to the patient from the secretions of the hands that he has devised a special set of long forceps which do away with the necessity for the insertion of the surgeon's hands into the abdomen. With these his last 600 cases have been absolutely without a sign of infective reaction. About the genital region especially the skin is apt to harbor micro-organisms. The use of rubber tissue which covers the skin area, is adherent to the skin, and is cut with it, has been suggested, but it is expensive. The astringent powder method suggested by Dr. Dawbarn is especially suitable for these cases in the genital region, and it gives excellent satisfaction in varicocele and in hernia operations.

Depilatory or Chemical Shaving.—Dr. Dawbarn suggested the use of a concentrated solution of hydrosulphate of sodium (25 per cent.) as a means of removing the hair from the axilla and the pubis instead of by the razor. The solution is faintly greenish in tinge, but is watery and unirritating. It completely removes the hair, yet without destroying them. In children, in women, with high axillæ and in other conditions, it is practically effective. It might be used on the eyebrows without danger, since it is unirritating, and on the lips, since it is not poisonous.

Technic of Prostatectomy.—Dr. Ramon Guiteras of New York city said that a few years ago prostatectomy seemed a difficult operation, whose accomplishment would never be common, and whose technic could not be simplified. Now it is known that prostates can be easily removed, and even general surgeons take up the task readily. Dr. Guiteras considers that better than the suprapubic route with its dangers of infection in the perineal route, which provides good drainage naturally. French surgeons prefer the transverse incision in the perineum somewhat in front of the rectum, but the route through the prostatic urethra is easier and more satisfactory. An instrument is needed to pull down the prostate so that the surgeon can enucleate it. For this Dr. Guiteras at first employed the rubber balloon devised by Dr. Parker Syms, but he found this scarcely firm enough in its pressure. He devised a special instrument for the purpose which gives very satisfactory results. It is a sound shaped like a stove lifter, with the distal end flattened, so as to enable it to exert firm, even pressure. With this the prostate, no matter what its size, can be brought well into the wound.

Contraindications for Prostatectomy.—These are now better and more definitely known than before. Old feeble patients and those suffering from heart disease should not be operated upon. Any kidney disease is an absolute contraindication. Any infection of the urinary tract makes the operation serious. The condition of the bladder, however, is almost a negligible factor. With good drainage it will improve. Even when for years the bladder has been overdistended and is in an extremely atonic condition, it will improve and resume almost its normal function again.

The purely scientific business of the session was then interrupted for the reading of a

PANEGYRIC OF VIRCHOW

by Dr. C. A. L. Reed of Cincinnati, the sometime president of the American Medical Association. Dr. Reed's address was a masterly effort that described the career of Virchow in all its manysidedness as a model for the aspiring physician of all times and places.

Dr. Jacobi, in moving a vote of thanks to Dr. Reed, said that the address came very suitably from an American before an American Medical Society, and that, too, the oldest in the country. For Virchow liked Americans. He admired the way in which the army medical department made use of the records of the civil war to give the rest of the world information as to wounds, their treatment and outcome.

The President's Address.—Then followed the address of the retiring president of the Society, Dr. Henry R. Hopkins of Buffalo. He called attention very forcibly to the advisability of the creation of a special department of public health, the head of which should have a seat in the President's cabinet. This would prove of the greatest possible material benefit to this country, the best example of which is to be found in the good accomplished by Dr. Leonard Wood in Cuba. Dr. Hopkins dwelt on the necessity for union in the medical profession, and said that only a certain feeling of pride and custom kept organization apart, whose reunion would do much for the interests of the medical profession. The profession must continue agitation and organization until there shall be only one examining board instead of three as now. Already the public are impatient with the present system. There must be even more and more discrimination in the acceptance and licensing of applicants to practise medicine. At present the Empire State is satisfied with requirements much less than those demanded for the army, navy or marine hospital service. This is not worthy of the relation of a great state to its people. Better medical education and training is needed, especially for health officers. More than anything else the unity of the profession will bring these needed advances in its train.

(To be continued.)

NEW YORK ACADEMY OF MEDICINE.

Section on Orthopedic Surgery.

Meeting of December 19, 1902.

Reception Given to Prof. Adolf Lorenz, of Vienna.—The President of the Academy, Dr. Robt. F. Weir, called the meeting to order and delivered a brief address, then turned the meeting over to Dr. George R. Elliott, Chairman of the Section.

Dr. Weir remarked that an introduction of Prof. Lorenz was almost superfluous, as he was well known, not only in his own department, but in advanced science generally; that his demonstrations of his methods in this country were of educational value to the American physician as well as of great benefit to the special department of orthopedic surgery. The opportunity of actually seeing Dr. Lorenz at work offered a chance of learning altogether different from and in advance of simply reading about his methods, as object teaching is a superior educational method. His special peculiarities were observed in a way not revealed from his writings.

Dr. George R. Elliott said, as Chairman of the Section of Orthopedic Surgery, it was a great pleasure to give expression to the honor the Section felt in having Prof. Lorenz present. It was also a great personal satisfaction to know that his work had received some of the recognition it deserved. From medical men much had been said about the great force used. It was true that Prof. Lorenz was a very strong man, but those who had seen him operate must have observed that the essential element in his operations was the intelligent direction of that force, graduating it to overcome the resistance of the contractured tissues, so that they were reduced to a state of flaccidity. Dr. Elliott further said that six years ago he reported his first case of congenital dislocation of the hip successfully treated by the Lorenz method, and in the report made the following statement: "The operation which we have just considered is a real advance in surgery and, throwing all enthusiasm aside, I feel convinced that it will soon be performed with strikingly good results in all civilized parts of the world." It was unnecessary to say how that prediction had been fulfilled.

Dr. Elliott then called upon Prof. Lorenz to address the meeting.

Address of Prof. Lorenz.—"I consider it a great honor to be allowed to appear before you and I know of no better way to show my gratitude than by asking your permission to explain to you some of my principles which hitherto have ruled my orthopedic work.

"I hope to meet your approval at least regarding some of these principles, as to others which may rouse your opposition for the moment, I hope you will find them worthy of your objective trial. Even if these principles do prove to be different from yours, certainly we who are on both sides of the Atlantic, which divides the places of our work, completely agree on the same aim, that is, to help our patients in the best way. As to my methods, I can recommend them as both safe and successful to the patient. In saying this, I touch upon my leading principle, that is, curing my patients without danger of loss of life. Luckily deformities seldom offer what we call indicatio vitalis, therefore, when we operate on deformities we should never arouse even the possibility of putting the life of our patient in danger. Following this principle, I generally prefer bloodless operations to the bloody ones. Usually the results are the same, but in many cases those of the bloodless ones are even better. As long as the bones are elastic enough, I prefer osteoclasis to osteotomy; this latter operation is exclusively reserved for adolescents and adults. In hip deformities I prefer bloodless corrections to osteotomy as long as even the slightest motility of the joint can be stated; only in cases of complete bony ankylosis do I operate with the chisel.

"All cases of knee contracture I correct by the intra-articular modeling redressment as long as even the slightest motility can be found. Only cases of complete bony ankylosis of the knee-joint, which are rarer than is usually believed, are reserved for the bloody operation.

"In all deformities of the foot, both paralytic and congenital, I rely exclusively upon my modeling redressment of the foot, and from a thousand-fold experience I can assure you that the results are generally beyond expectation. In my opinion the wedge-shaped excision of the bones of the foot, newly recommended by the French, is nothing more than a deplorable mutilation of the foot. The results of the modeling redressment of clubfoot have been preferred by many others and I am happy to say that at least in Germany, this method is predominant.

"On the whole, I daresay that I prefer bloodless operations to the bloody ones as long as any possibility exists of securing the result in this way. According to this principle, I cannot sympathize with the total extirpation of the sterno-cleido-mastoideus in wryneck. After my experiences the subcutaneous myotomy of this muscle in connection with the modeling redressment of the cervical skoliosis is perfectly sufficient to cure the *caput obstipum* thoroughly and without leaving a scar. In this realm I go even further, as the congenital *caput obstipum* in children can be cured even without tenotomy, only by myorrhexis of the sterno-cleido-mastoid muscle, and the results obtained by this method are the most perfect ones from a cosmetical standpoint. The ruptured muscle regains its normal length as well as its normal elasticity to such a degree as to allow the head to move freely to the opposite side. Besides this, the ruptured muscle retains a normal prominence with its partner, restoring the normal configuration of the neck, in this way avoiding the known applanation of the operated side which usually occurs after open or subcutaneous myotomy.

"Following this principle you will share many advantages with your patient. The latter readily consents to be operated upon as he runs no risk of life, and as for yourself, you will feel quite easy about him.

"Another principle which I have always followed is the so-called central correction of deformities, which means that every deformity should be corrected in the vertex of its angle. If you should prefer to correct a deformity in one of the sides of the angle, even near the vertex, the deformity itself would remain and instead of a correction you would have only a compensation for the deformity. This compensation implies some shortening of the side of the angle, that means of the leg, which shortening should be avoided under all circumstances. This principle is very important with regard to the contractures of the hip-joint. It is obvious that subtrochanteric osteotomy contradicts the above-mentioned principle. By correcting or compensating the deformity you shorten the leg. Agreeing with the principle of central correction, I always do central, that is pelvotrochanteric osteotomy. Having performed this operation, correction is very easy without causing any further shortening of the leg. I object even to oblique subtrochanteric osteotomy, although it avoids shortening by a complicated and difficult extension after treatment by which the patient is confined for some weeks to his bed instead of being able to get up a few days after the operation.

"Following the principle of central correction you will also object to supracondylic osteotomy or osteoclasis in correcting the contractures of the knee-joint. In preferring central, that is, intra-articular correction, you will avoid shortening the limb. In correcting genu valgum the principle of central, that is to say, intra-articular correction cannot be thoroughly attended to because —except in cases of young children—a loose knee is to be feared, and besides the treatment takes too much time. In genu valgum supra-condyloid osteotomy is still the predominant method because of its general reliability, but beyond doubt epiphysiolysis on the lower end of the femur allows better correction of the deformity, being a more central method than the supracondylic osteotomy. Unfortunately the method of epiphysiolysis is available only in children from five to sixteen years.

"Another important principle of modern orthopedic surgery is that of absolutely saving the bones by dividing the soft parts as far as circumstances may demand it. This conservatism toward the bones and this radicalism against the soft parts (just the inversion of a principle of former times) condemns all cuneiform osteotomies and resections en bloc, of the bones, and makes it a rule to correct deformities by simple linear osteotomy, sacrificing the soft parts as far as may be desirable. Indeed it is very easy to correct every hip deformity of whatsoever degree by similar linear (pelvitrochanteric) or central osteotomy, after having thoroughly divided the abductors and the subspinal soft parts. It is of no importance whether you divide them in open wound or subcutaneously, you must only divide them thoroughly. The wedge-shaped excisions of bones in correcting knee contractures are likewise to be avoided, or at least to be restrained to a minimum by regardless radicalism against the soft parts in the fossa poplitea. As to the excisions of bones in the treatment of clubfoot, I have mentioned above, I abhor them.

"The principle to correct deformities only by simple linear osteotomy, is even available in those most difficult cases of bowlegs with anterior convexity of the bones. In such cases I apply one or two linear osteotomies to the center of the deformity, then I add Achillotenotomy and sharp screw extension above the ankles until correction is allowed.

"Another principle of common interest refers to the treatment of tuberculous diseases of the joints in children, and to the treatment of deformed paralytic limbs.

I must avoid discussing the question whether operative or conservative treatment should be carried on in these cases. My standpoint on this question is rather one of expectancy. But I do not hesitate to declare that up to now I have never made a resection of a tuberculous joint in children, and that the results of conservative treatment seem to me far better than those of operative treatment. Nevertheless I am far from denying the necessity of operating in some special cases, particularly in common hospital practice. However, the principle of which I will speak refers to the question whether or not mechanical treatment should be carried on in a way to exclude all functional work of the limb during the whole treatment. Observation of nature let alone seems to me to give the answer to this question. If we contemplate a case of hip disease never interfered with by any treatment at all, we learn in many cases that nature unhelped by our mechanical means, needs no more time to cure the disease than we do. After some two or three years all may be over. During this time the sick child may have been confined to bed by great pains in the hip-joint some months only. During the rest of the time they walk about without the help of crutches as well as they can, using the limb according to the actual state of sensitivenesss. After all the disease heals without any suppuration even, and finally we see these children come to us to get rid of their deformity. We find a contractured limb, but fit for function even under the unfavorable mechanical conditions of the deformity. We find the bones solid and the soft parts not so much wasted as we expected; and last but not least, we find that the growth of the limb has not been much interfered with by the disease. These cases are the best objects for operative treatment because the good state of the legs very soon enables them to profit by the correction of the deformity. If we compare one of these cases of natural healing to the results of our mechanical treatment, which may have begun at the first sign of the disease, we will find that we have scarcely shortened the course of the disease. We accomplish that pains have been loosened or suppressed, and that the limb may be in a tolerably good position. But surely we shall find the leg in a wasted condition, the muscles being slack, the bones lacking solidity, being quite unable to support the weight of the body, although pains have long since disappeared. Probably we shall find besides that the growth of the leg has been much interfered with by the disease. There can be no doubt that this deplorable condition of the limb is due to the fact that both by suspension and fixation by our mechanical means the leg has been totally excluded for many years from every function of movement and weight carrying. From this consideration is derived my principle to exclude the diseased limb no longer from a measured function if severe pains will not forbid it. I never allow any movement of the diseased joint, but I suspend the weight only as long as the pains demand it, always taking proper care to procure slight abduction of the leg. As soon as the pains allow it I begin to attend to the muscles by massage. Of the movements, only active and passive abductions are made in the later after-treatment to prevent the tendency to abduction.

"My final aim is to procure a solid ankylosis of the hip-joint combined with good position of the leg, experience having taught me that great mobility and bad function with lack of any endurance are common allies. With greatest enthusiasm I would welcome a method which would procure a true bony ankylosis of the diseased hip-joint, bony ankylosis of the hip and good position of the leg being the condition for the best result both from a cosmetical and functional point of view.

"As you may have seen by what I have said, I make little of the permanent extension. I consider extension only a matter of fixation, direct and indirect fixation together naturally give a greater degree of surety. I have said that every articulation attacked by chronic diseases should not be prevented from function any longer than is absolutely necessary. In saying so I turn against the method of treatment generally used in Germany, which makes the patients wear their pressure relieving and fixing apparatus so long that they become slaves to them. This same principle I emphasize using in the treatment of paralytic deformities. I am convinced we render no great service to our patients by making them wholly dependent upon their apparatus; the limbs atrophy by exaggerated use of apparatus to such a degree that they become useless for any function. It is my practice to correct thoroughly the paralytic deformities by modeling redressment, in case of need combining the transplantations of the tendons, and to fortify the rest of the muscles by massage and exercises in order to secure the obtained correction. For the rest, the patients must be accustomed to make use of their legs as much as possible without apparatus, or by assistance of the simplest one. Generally a flannel bandage or laced boot will give the necessary support. In any case I take care to secure the corrected position during the night by means of a simple apparatus. I think that enclosing the leg in a steel support is to be avoided as by so doing the leg will be excluded from any function. On the contrary, I try to make the leg independent of mechanical appliances as far as possible. Only in the treatment of total paralysis, which fortunately occurs rather seldom, the permanent use of mechanical support is indispensable. In the treatment of skoliosis I am wholly against the exclusive application of mechanical supports, especially against those which are worn day and night. I restrict the use of corsets to special cases which evidently want a support. Besides I take special care of the muscles of the back by exercising them and endorse the necessity of forcible anti-skoliotic gymnastics.

"Gentlemen, I think it is unnecessary to follow these principles in detail, and I hope you will not object to my endeavoring to solve the problems of orthopedic surgery by operative treatment, and if possible by a bloodless one, and to restrain and simplify orthopedic appliances.

"If the surgical task has been thoroughly solved, orthopedic appliances, if necessary, may be of very simple construction so that special mechanical ateliers may be considered superfluous. If orthopedic surgery conceives and carries out its themes in such a way, then it will be possible to indulge in orthopedic surgery at every surgical station, even if great mechanical means may not be at hand. Then orthopedic surgery will not deny its democratic character which it must have to be able to communicate its progress and improvements to even the poorest children who may be in want of relief."

Dr. V. P. Gibney said that he would like to tell the Fellows of the Academy of Medicine just how much he had learned from Prof. Lorenz. He said: "All this information given us this evening about bearing weight on the joints, about correcting deformities, about destruction of muscles which produce deformity, especially the adductors, has been something of a revelation. Nearly all the medical men and medical students in this city, during the past week, had the opportunity of witnessing his magnificent demonstrations. At the Hospital for Ruptured and Crippled he gave us his views about the management of hip disease, clubfoot and wryneck, and while it seemed at first that they were rather antiquated, when Dr. Lorenz began to elaborate them, he felt that they were in the presence of a master. Many years ago we were taught to believe that the function of orthopedic surgery was to correct deformity. That, he observed, was still the English version, as the London orthopedists, whom he had met, had little to say about the prevention of deformity. Dr. Lorenz said at his clinic in Vienna, he allowed the mother to tell the story, and the mother would speak of the pain, the expression of abscess formation distending the tissues about the hip-joint. We had been able in our hospital work for many years to predict this abscess formation. We find that in most cases a plaster-of-Paris bandage absolutely fitted to the hip, knee and malleolus, extending from the free ribs down to the foot does control pain, and the child from having twenty or more cries at night will have few or none. Sometimes we get a case which does not yield, then we apply light and heavy traction in the line of the deformity. Finally we discover a deep abscess. Lorenz tells us only a confirmation of our own views that the pain in hip disease comes in exacerbations. We do not quite agree with him that it is necessary to give up traction. He employs traction sometimes, but simply for fixation. He further claims that we employ traction for too long a period, that we cause atrophy of muscle and destroy functional activity. His idea is to employ traction over short periods; he does not allow deformity to occur at all. We asked him if he aimed to get functional restoration, to which he replied, 'Yes, five or ten times in a hundred.' All orthopedists, I think, will agree that our aim is to get the hip cured so that we will have perfect restoration of function. There is great room for reflection and whether we are all wrong about traction remains to be seen. Those of you who were present at the Cornell clinic saw his ability to take a virgin clubfoot, an extreme case, and within half an hour he and his able assistant, Dr. Mueller, had 'pulpified' the foot, so to speak, had rendered it 'like a wet rag.' Dr. Lorenz says that age is no deterrent in the bloodless correction of clubfoot, though when the bones cannot be managed by the hand he uses instruments for their manipulation. He spoke of a case of a man, aged forty-two years, where he had reduced an extreme equino varus, with perfect restoration. If he has done no more good than to show what can be done in clubfoot he is a great benefactor to the profession and to the public."

Dr. Royal Whitman said he had been especially interested in Dr. Lorenz's contention that the anterior displacements—so-called transpositions—that so often followed bloodless operations, were to be classed as incomplete successes, rather than failures, as he had considered them. Recognizing, as he did, that the function in these cases was often greatly improved, he should now be encouraged to persist in maintaining the limb in an attitude of abduction and extension, even when it was evident that anatomical reposition had failed. The result was to be expected in older subjects and Dr. Lorenz even operated with the aim of simply transposing the head of the femur for the purpose of lengthening the limb and improving its functional ability. This treatment, which might be applied in adolescence, or even later, seemed to him a very important advance. Another outcome of this line of work was its application to disabled hip-joints in adults, as Lorenz had advocated recently. To illustrate: He had that afternoon seen a patient who had sustained a fracture of the neck of the femur one year ago. There was non-union, two inches of shortening, and the weak limb was used with the aid of crutches in an attitude of adduction and flexion. He had been able to assure the patient that if under anesthesia the limb were forced into extreme extension and moderate abduction (thus forcing the upper extremity of the femur forward beneath the anterior superior spine) and were fixed in this attitude by a Lorenz spica he would be able to discard his crutches and that his discomfort and pain would be relieved. He had this confidence because the treatment was based on correct principles and because he had already applied it in a modified form in other cases.

Dr. Reginald Sayre remarked that he voiced the sentiments of all orthopedic surgeons in saying that much had been learned during Dr. Lorenz's visit. After having seen him operate we realized exactly what he did in a way we could not do from reading of his work and methods. He referred to the amount of force which we had seen could be used on the soft parts and thought this could not be realized unless seen. He thought that many who had seen Dr. Lorenz operate realized for the first time that eight to ten months were necessary to retain the parts in position and thought this had a fundamental bearing on Dr. Lorenz's success. The reduction was simply one step in the operation. It was not until he had seen him operate abroad that he understood clearly the amount of strength that should be exerted and realized that his own failures had been due to insufficient force and too short a period of retention in plaster-of-Paris.

Dr. Henry Ling Taylor said the visit of Prof. Lorenz had been the most notable as well as the most picturesque event in the history of orthopedists in America. His procedures had been worked out with little regard for conventional practice, but with astonishing simplicity, directness and thoroughness, and he could not help feeling that his demonstrations would have a profound, lasting and happy effect on American practice. Personally he considered it a rare privilege to have known him and to have seen his work.

Dr. Newton M. Shaffer said he thought Dr. Lorenz had done a great deal for orthopedic surgery. Remembering the days of the elder Sayre, Taylor and Knight, and that America might be called the birthplace of orthopedic surgery, yet there had come to us from abroad a great teacher and one who had taught us. He remarked that many had seen him operate and do what was considered almost impossible. He had, at his clinic, presented to Dr. Lorenz a stubborn, resistant case of congenital clubfoot, expecting to see the Doctor refuse to operate; nothing of the kind occurred, Dr. Lorenz corrected the deformity, as a matter of course. He said that the Lorenz clinic in Vienna had become the Mecca for orthopedists and that yearly Americans were flocking over there.

Dr. Weir, president of the Academy, proposed a resolution that a vote of thanks be offered Dr. Lorenz, which was seconded by Dr. Homer Gibney and unanimously adopted.

The meeting then adjourned and was followed by a reception to Dr. Lorenz.

THE NEW YORK ACADEMY OF MEDICINE.

Stated Meeting, held Thursday, December 18, 1902.

The President, Robert F. Weir, M.D., in the Chair.

Panama Canal Hygiene.—The first business of the evening consisted of the presentation of resolutions with regard to the hygiene of the construction of the Panama Canal. By unanimous vote a set of resolutions with regard to the health of those engaged in the excavation of the canal were approved and directed to be sent to the President. Attention was called to the fact that hitherto work at Panama has been done with very heavy mortality. Recent discoveries, however, have enabled medical officers to control the ravages of tropical diseases. Especially has this been shown by

American experience in Cuba. It is suggested then that a member of the commission in control of the canal, appointed by the President, should be a medical man and that the amplest powers should be given to medical officers in charge of the sanitation of the canal.

After this a resolution of condolence with the family of the late Dr. Walter Reed, Surgeon U.S.A., was unanimously adopted. Dr. W. W. Keen of Philadelphia suggested that Dr. Reed's well-known services for the sanitation of Cuba had undoubtedly shortened his life and that the wonderful success obtained by his efforts in eradicating yellow fever and lowering the mortality from malaria should be recognized by some lasting and suitable monument. No man of our generation has probably accomplished more lasting good for the race than Dr. Reed by his success in Cuba. His family deserves the sympathy not only of the government, but of the general public of this country, and as Dr. Reed had only his salary to depend on, special efforts should be made to see that his untimely death in the cause of medical science and humanity will not prove a source of suffering for those he leaves behind him.

Symposium on Gall-Stone Surgery.—The first contribution to the symposium was a paper by Dr. George E. Brewer on some practical points in the anatomy of the gall-bladder region.

Position of Gall-Bladder.—While the text-books of anatomy give the normal position and relation of the gall-bladder to the various blood vessels, to the other organs of the abdomen and to the lymph glands in connection with the biliary tract, there are constant variations in all of these particulars that make it impossible for the surgeon to depend on any definite situations in the matter. Especially are there variations in the position of the papilla in the duodenum, through which the gall-ducts empty into the intestine. The practical point for the surgeon to know is that he must be constantly on the look out for anomalous anatomical relations, some of which are of great importance.

The details of this paper will be found in a later issue of the MEDICAL NEWS.

Causes of Gall-Stones.—Dr. A. J. Lartigau said that the discovery of bacteria in the center of gall-stones had opened a new chapter in the etiology of this condition. It is now evident that their origin bears a definite relation to infectious processes. Bile was formerly thought so antiseptic that it would prevent the growth of bacteria. Experiments have shown, however, that not only will bacteria introduced into the gall-bladders of animals, retain their virulence for long periods, but that they will induce calculus formation. According to the report of observations before the French surgical society, the most prominent causative bacteriological factors, the *Bacillus coli communis,* the typhoid bacillus and various forms of staphylococci. Calculus formation is usually due to attenuated bacilli. It used to be thought that foreign bodies of one kind or another, furnished a nucleus for the formation of biliary calculi. When sterile objects of various kinds, however, are introduced into the gall-bladder, even fragments of calculi that are sterilized, no calculus formation results. Cut thread and sutures were introduced with negative results, provided they were sterile on introduction. Complete stagnation of bile, is apparently unfavorable to gall-stone formation.

Personal Investigation.—In a series of observations, Dr. Lartigau has found that pyogenic bacteria, especially the *Bacillus pyocyaneus* and the *Bacillus coli communis* are very little inhibited in their growth when introduced into the gall-bladder. Small stones result from their presence in six weeks and large stones in from six to nine months. No special microbe is necessary but many different kinds of ordinary pathogenic bacteria produce biliary calculi. Sometimes intestinal bacteria invade the gall-bladder. A mixed infection, that is the introduction of several varieties of bacteria, will not produce more biliary calculi nor cause their formation sooner than simple infection. With regard to foreign bodies, they do not, when sterile, become coated with bile salts, unless, as the irritative result of their presence, colon bacilli find their way into the gall bladder, from the digestive tract or the bladder.

Dr. Lartigau has demonstrated that certain toxic products of bacteria will of themselves serve to cause the deposition of biliary salts which leads to the formation of gall-stones. If bacteria growing on culture media are enclosed in celloidin sacs the formation of gall-stones will result, quite as if the bacteria were free. In these cases the celloidin sacs, being somewhat porous, allow the escape of bacterial products mingling with the bile, causing chemical precipitation initiative of gall-stones. Colon bacilli are apt to form large gall-stones. *Bacilli pyocyaneus* cause the formation of small calculi. The introduction of tubercle bacilli is not always followed by calculus formation, but sometimes they favor calculous disease.

Route of Infection.—The usual route of infectious micro-organism from the digestive tract is through the blood stream. During the heat of digestion it is not an unusual thing for micro-organisms to find their way into the portal circulation. Adami and others have shown that micro-organisms fed to animals may be demonstrated in the liver circulation. At times infection seems to take place from the digestive tract. This is not as common as used to be thought. It is probable that presence of irritative conditions of various kinds, congestion or interference with the flow of bile by enlarged lymph glands, may predispose to conditions in the duodenum, which cause reflux of intestinal contents into the bile ducts, and hence set up infectious processes in the gall-bladder. It must be remembered that even dead bacteria are not inert bodies, but may possess in themselves certain chemical substances that will cause chemical changes in the bile.

Diagnosis of Gall-Stones.—Dr. J. B. Murphy of Chicago said that seven to twelve per cent. of all autopsies show the presence of gall-stones. Not more than ten per cent. of such persons have any symptoms from their gall-stones. There must be some disturbance of the stone which causes it to irritate the gall-bladder or to become caught in the bile duct before symptoms are noted. This acute exacerbation of the cholelithiasis is probably due to a secondary infection, either from the digestive tract through the portal circulation, or through the bile ducts, the papilla in the duodenum not closing so firmly because of the irritation of the presence of the gall-stones. We know now that bacteria are needed for cholesterin formation and most gall-stones are mainly composed of this substance. After its formation secondary infection sets up an acute catarrhal inflammation, with an increase of mucous secretion, and this causes movements of the stone until it finds its way into the bile ducts.

Symptoms of Gall-Stones.—Dr. Murphy said that the usual symptoms of the presence of gall-stones are very characteristic. There is severe cutting pain in the region of the gall-bladder, referred not seldom to the shoulder followed by intense collapse and vomiting. There are a number of anomalous symptoms, however, and their connection with gall-stones is often entirely ignored. In about 90 per cent. of all cases of gall-stones that come for operation there is a history of a series of attacks of gastralgia. These attacks are evidently due to irritative conditions set up by the presence of the gall-stones. A repetition of gastralgic symptoms should arouse suspicion of the presence of a gall-stone.

Virulence of Symptoms.—As a rule an attack of gall-stone colic is a benign affection followed by complete and rapid recovery. The younger the patient, however, the more danger there is that the attacks will prove serious. In a patient recently operated upon, 62 hours after a first attack of gall-stone colic followed by intense depression, from which there was no reaction; gangrene of the gall-bladder was found and only prompt operation saved the patient's life. Gall-stones are not as dangerous as appendicitis and yet it must not be forgotten that fatal perforation of the gall-bladder or the gall-duct may take place and the surgeon's attitude in these cases must be constantly one of armed expectancy.

Temperature Charts.—In the absence of other characteristic signs of gall-stones it must not be forgotten that the temperature chart of a patient suffering from cholelithiasis may prove of itself sufficiently characteristic to enable the surgeon to make a diagnosis from it alone. There is apt to be a rapid ascent of the temperature and then a rather sharp angle in the chart, with almost as rapid descent, almost to normal, followed after a day or so of intermission by another febrile attack. The intermittency is always irregular. These temperature anomalies may succeed one another for ten days to two weeks at uneven intervals, and then not recur for from three to nine months. Then they may occur once more. In one case Dr. Murphy has known them to be absent for several years, yet recur afterward.

Illustrative Case.—In a case recently operated upon in Los Angeles, Cal., the patient had had such intermittent attacks for eleven years. There was never any colic, no history of pain, nor biliary disturbance or jaundice. The region of the gall-bladder was sensitive to deep pressure, but not markedly so. The stone was found in the beginning of the common duct and was removed on operation. The next day the patient had another attack of fever. Then a tube was put in, thoroughly draining the biliary tract, and there were no more febrile attacks.

Dr. Murphy's complete paper will appear in a subsequent issue of the MEDICAL NEWS.

Present Status of Biliary Surgery.—Dr. W. S. Mayo of Rochester, Minn., said that appendiceal and gall-stone surgery have certain similarities, but they differ in this that while the chronic appendicitis is always dangerous and seldom fails to give symptoms, many gall-stones slumber for years, some of them indeed for life, without a sign of their presence. It is calculated that about 2,000,000 Germans have gall-stones. Of these only about 100,000 have any symptoms from them. In general, it may be said that nearly ten per cent. of the population have gall-stones, but only about five per cent. of those that have gall-stones have symptoms from them.

This paper will appear in a subsequent issue of the MEDICAL NEWS.

Typhoid Bacilli, the Corset and Gall-Stones.—Dr. W. W. Keen of Philadelphia said that the typhoid bacilli may persist for many years after convalescence from typhoid fever, and that there are three favorite lurking places, the bone marrow and the spleen and the gall-bladder. He has found typhoid bacilli in pure culture in a bone abscess thirty years after an attack of typhoid fever. Undoubtedly typhoid bacilli constitute an important element in the etiology of gall-stones. There are other factors, however, that must not be forgotten. Women suffer from gall-stones four times as often as men. It is evident then that besides infection, interference with the circulation, such as is caused by the corset, may be a predisposing influence in the production of gall-stones. With regard to the prognosis of gall-stone surgery, Dr. Keen considers that the coagulation time of the blood is an important element. In a recent case by the administration of calcium chloride, he was able to reduce the coagulation time of the blood from 15½ minutes to 8 minutes. The dose given was five grains three times a day, Mayo Robson sometimes gives sixty grains three times a day.

Mortality after Operations.—Dr. Munro of Boston said that it must not be forgotten that deaths after gall-stone surgery may be due to other causes than some defect of technic during the operation or some fault of aseptic precautions. In a recent case of a young woman who had never menstruated, but who had suffered from what seemed to be ovarian pain was operated upon. It was not definitely decided before operation whether the ovary or the appendix would be found diseased. What was found was an immensely enlarged gall-bladder, whose fundus was in the appendiceal region. The pressure and perhaps some infection had caused gangrene of the biliary tissues and peritonitis, which resulted fatally. At the autopsy it was found that the thymus gland was persistent, that there was hypoplasia of the aorta, an undersized uterus and that general lymphatic enlargement which has now come to be known as the *status lymphaticus*. The bacterial examination was negative. It would seem that the enlargement of a gland in the hepatic region had perhaps interfered with the flow of bile and caused the distention and gangrene of the gall-bladder, the young woman being predisposed to death by her *status lymphaticus*.

BOOK REVIEWS.

A GUIDE TO THE PRACTICAL EXAMINATION OF URINE FOR THE USE OF PHYSICIANS AND STUDENTS. By JAMES TYSON, M.D., Professor of Medicine in the University of Pennsylvania and Physician to the Hospital of the University; Physician to the Philadelphia Hospital; Fellow of the College of Physicians of Philadelphia, etc. Tenth Edition. P. Blakiston's Son & Co., Philadelphia.

THE fact that this manual has been found to be of great practical value to the medical profession can be proven in no more conclusive way than by saying that over 25,000 copies have been published since the book first appeared. In order to maintain it as an exponent of the latest methods of clinical examination new editions have been frequently necessitated and it has just now passed through its tenth revision.

Numerous additions and corrections have been made, but in order that the student or busy practitioner should not be made to wade through numerous obsolete theories and methods considerable material has also been cut out. The significance of the various tests in their relation to pathological lesions is especially dwelt upon and an earnest endeavor to make it a thoroughly modern book seems to have been realized.

THE ISLE OF CONTENT. By GEORGE F. BUTLER, M.D. Erudite Press. Concord, Mass.

A CHARMING and artistic book, by George F. Butler, M.D., lies before us, bearing a suggestion of the poetic and beautiful thoughts that may come to so busy and scientific a man as its author.

The Isle of Content shows a beautiful bit of book work, which is worthy of the significant phantasy that introduces it, and gives it its name, as well as the other "Waifs of Thought" that fill its pages.

There is a delicate personal touch about the book, hinting at the close companionship between the daughter who collects and edits these selections from her father's writings, and the well-known man who has time, in spite of his responsibilities, for outdoor love and life.

The fragments are often as suggestive as fully developed essays, and while by no means medical in their tendency, nevertheless could only be written by a medical man. They embody thoughts that go hand in hand with deep experiences in life, experiences that if touched delicately will reverberate in harmony with other thoughts. It is in this very delicacy that the charm of expression lies, for in this collection of poems and fragments with a few choice illustrations there is breathed a broad sympathy for what is true and beautiful, and a tender understanding of what is sad and wrong in life.

Though miscellaneous and unrelated these little literary paragraphs might appear at first sight, yet to those who know the solid background of work that has established their author's reputation, they read collectively as the experience of the over-soul that is not touched by work and care.

A MANUAL OF DISSECTION AND PRACTICAL ANATOMY. Founded on Gray and Gerrish. By WILLIAM T. ECKLEY, M.D., and CORRINE B. ECKLEY. Lea Bros. & Co., Philadelphia.

As the preface of this book states, its purposes are to provide the student with a detailed guide for dissection, and to answer the requirements of the physician and surgeon for review of the anatomy of any region.

The means of carrying out this rather broad purpose are, briefly, well-presented and carefully edited matter, whose advantageous features in these particulars are reinforced by a large number of very valuable plates and diagrams, and a long series of tabulations, which aim to give those features which are the most difficult to remember, and at the same time very likely to be required in the review of an important region prior to operation.

The department of the book which fulfils this feature most perfectly is that devoted to the vascular system, where, in tabular form, are given the main arteries and their branches, and each table is accompanied by a clear diagram, showing how and where the various branches are given off from the parent trunks. This is certainly an admirable feature, especially when it concerns vessels that are familiarly present in the surgical fields, and yet whose details cannot be easily remembered. Where an important surgical landmark, for example, Poupart's ligament, crosses the vessel, a dotted line is placed. At points where large trunks pass through openings, for example, the lower arch in the great abductor muscle in the thigh, a circle is placed about the vessel. Points of corresponding importance in the other departments of anatomy are similarly well elucidated, and this book doubtless will meet with the favor of all who need such manuals.

GYNECOLOGY—OBSTETRICS—MENOPAUSE. Parts I, II, and III. Being a revised and enlarged reissue of three serial articles appearing in *The Medical Council.* By A. H. P. LEUF, M.D., author of "Practical First Principles" and Associate Editor of *The Medical Council.* Medical Council, Philadelphia.

A FEW admiring friends have evidently got together and decided that their idol must not die, but live on forever in his writings. Doubtless, induced by the flattery of these, the writer has prepared this olla podrida for their edification, convinced that others also will glean choice bits of refined knowledge from his sage and philosophic remarks.

The gloom pervading the whole "essay" makes one shudder at the unkind fate that created lovely woman. Marriage is a failure and dooms womankind to all sorts of untold horrors. No hope is held out to the unfortunate wife who may develop a disorder of her reproductive organs. All men are beasts and have no consideration for their wives, but willingly condemn them to suffer on until the kindly hand of death is stretched out to them and they pass on to "that bourn whence no traveler returns."

The chapter devoted to the use of pessaries is both amusing and instructive. The author is still an ardent advocate of the old and discarded stem-pessary. The possibility of serious infection of the uterine mucosa is dismissed with but little ceremony, as if it were not worthy of consideration.

The much-respected "post-partum abdominal binder" and its many advantages are highly condemned by the writer as senseless and injurious. With such ideas the average obstetrician will take issue.

In spite of this rather severe criticism of Dr. Leuf's book, there is much of practical value in its pages, and many practitioners will be benefited by the reading of the volume.

The presswork on the book is much below the average, and is scarcely worthy of its contents. It looks cheap, and doubtless is so.

A TEXT-BOOK OF THE SCIENCE AND ART OF OBSTETRICS. By HENRY J. GARRIGUES, A.M., M.D., Consulting Obstetric Surgeon to the New York Maternity Hospital; Gynecologist to St. Mark's Hospital; Prof. of Obstetrics in the Post-Graduate Medical School (retired); Prof. of Obstetrics in the School for Clinical Medicine (retired); etc. With 500 illustrations. J. B. Lippincott Company, Philadelphia and London.

THE publication of a text-book by such a well-known man as Dr. Garrigues would in itself create a stir in the medical world. As one of the pioneers in the field of obstetrics in this country his work has more than helped to put the subject on a true scientific basis on this side of the Atlantic. Having spent so many years in the study of Midwifery no one should be better qualified to present the subject to the student as well as to the practitioner. The author has given us all the results of his excellent and mature judgment in the pages of this volume.

Great care has been taken to present the many and varied problems of Obstetrics in as simple and yet concise a manner as is consistent with thoroughness and completeness. All tiresome and space-filling detail is omitted; or the reader is clearly told where it can be found.

Doubtless, many will take issue with the ideas that are set forth in the treatment during the puerperium, but from the author's standpoint the reasons are most logical and conclusive. Certainly the experience that he has had with his methods, and the uniform good results they have produced in his practice, would seem to justify all that he has claimed for them.

In this day of obstetrical book production, originality of form and arrangement would be difficult for even so ingenious and fertile a mind as the author's; but the plan of the book is excellent and easy of handling.

It is refreshing to find so many new and good illustrations as are here given us. They are both many and applicable. They will prove a source of increased facility in the clearer understanding of the contents of the text.

THE MEDICAL NEWS.

A WEEKLY JOURNAL OF MEDICAL SCIENCE.

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SPECIAL ARTICLE.

REPORT OF THE COMMITTEE ON CONFERENCE OF THE MEDICAL SOCIETY OF THE STATE OF NEW YORK.

Submitted to the State Society at its Annual Meeting in 1903.

AT the last meeting of the Medical Society of the State of New York your president, in his Inaugural Address, after considering the reciprocal relations of the State and County Societies and the relations of the Medical Society of the State of New York to the National Profession, concluded as follows: "A thorough study of this subject leads me to the conclusion that the unification of the regular profession is demanded, not only by the profession, but by the thinking public and that a reorganization can readily be brought about if reason shall prevail. *This must be accomplished without the loss of identity or individuality of this time-honored society, with dignity and without the sacrifice of principle.*" He insisted that the time had come for a final effort, which shall have for its object the gathering of the profession of this State under a single banner, upon a liberal platform, and with representation in the American Medical Association.

His recommendations seemed justified because of the encouragement received by the reorganization upon a broad platform of the American Medical Association; because it has become evident that the national body appreciates the injustice done to the Medical Society of the State of New York by its excommunication during so many years; because of a growing desire for amalgamation by individual and influential members of the profession of this State, representing over thirteen thousand consistent and conscientious workers, who fail to find any underlying principle of sufficient importance to justify the existing division; because of the influence which would be gained in the settlement of vital questions affecting the public welfare; and, finally, because of the undignified and hopeless position of a noble profession divided against itself without reason and justice.

It was recommended that the Medical Society of the State of New York appoint a committee of five to confer with an equal number representing the New York State Medical Association for the purpose of formulating a plan which shall have for its object the reorganization of the regular profession of this State, in a body in affiliation with the American Medical Association. The committee to report the result of its labors at the next meeting of the Medical Society of the State of New York.

"In the event of failure of the New York State Medical Association to appoint such a committee, or if the committee should fail to agree upon a plan of reorganization, the committee appointed by the Medical Society of the State of New York shall have full power, if it deems it expedient, to represent this Society before the American Medical Association, and the secretary of this body shall, if the majority of the committee desires, provide the individual members with credentials of delegates to the American Medical Association. The method of election or appointment of the committee, representing this society, shall be decided upon by the committee to which the President's Inaugural Address shall be referred, and shall be ratified, as are all recommendations, by a vote of the society."

The committee on the President's Inaugural Address gave these recommendations its unqualified approval and suggested that the gentleman from whom it emanated be the Chairman of the Committee and empowered to associate with himself four representative members of this Society.

The Society having by vote approved the recommendations, the president became Chairman of the Committee on Conference and appointed as his associates Drs. Abraham Jacobi of New York City, A Van der Veer of Albany, A. M. Phelps of New York City, and George Ryerson Fowler of Brooklyn. The untimely death of Dr. Phelps was mourned by the Committee. Dr. Phelps entered upon the deliberations with great earnestness, showing a desire to do all in his power to bring about the union of our State profession. He was present at two of the meetings held in New York and took an active part at these joint conferences. The Chairman of your committee appointed Dr. Frank Van Fleet as Dr. Phelps' successor and since the death of the latter, Dr. Van Fleet has been active on the Committee.

On February 5, 1902, Dr. F. C. Curtis, Secretary of the Medical Society of the State of New York, sent the following communication to the President of the New York State Medical Association:

"ALBANY, N. Y., Feb. 5, 1902.

"DR. ALVIN A. HUBBELL, President of the New York State Medical Association, Buffalo, N. Y.

"DEAR SIR: At a recent meeting of the Medical Society of the State of New York, held in Albany January 28 to 30, the following recommendation contained in the inaugural address of the then president, Dr. Henry L. Elsner of Syracuse, and indorsed by the Committee upon Recommendations in the Inaugural Address, was adopted:

" 'That the Medical Society of the State of New York appoint a committee of five to confer with an equal number representing the New York State Medical Association for the purpose of formulating a plan which shall have for its object the reorganization of the regular medical profession of this State, which body shall be in affiliation with the American Medical Association, and that the committee report the result of its labors at the next meeting of the Medical Society of the State of New York.'

"I trust that the purport of this action of our Society is clear, and that it may meet with a response from the Association of which you are president. I am, dear sir,

"Yours very respectfully,
(Signed) "F. C. CURTIS, Secretary."

To which a supplement was added, dated

"ALBANY, N. Y., Feb. 7, 1902.

"DR. A. A. HUBBELL, President of the New York State Medical Association, Buffalo.

"DEAR DOCTOR: I would add to my letter of the 5th inst., reporting to you the action of the Medical Society of the State of New York in proposing to appoint a committee on conference with one to be appointed by the Association of which you are president, that the following committee has been appointed: Dr. Henry

L. Elsner of Syracuse; Dr. A. Jacobi of New York; Dr. A. Van der Veer of Albany; Dr. A. M. Phelps of New York; and Dr. George Ryerson Fowler of Brooklyn.

"Yours very truly,
(Signed) "F. C. CURTIS, Secretary."

At the Council meeting of the New York State Medical Association held on February 7, 1902, the following, introduced by Dr. Ferguson, was adopted:

"WHEREAS, The Medical Society of the State of New York appointed a committee to confer with a similar committee from the New York State Medical Association, with the view to a union of the two organizations, and notice of such creation of a committee having been officially given to our president, together with the request that a corresponding committee be appointed by us; therefore be it

"RESOLVED, That this Council (being the Executive Board of the Association) appoint for the purpose of conference in question a committee of five, consisting of Dr. E. Eliot Harris, as chairman, and Drs. William H. Biggam, Emil Mayer, Parker Syms and Frederick Holme Wiggin, to which committee the president is added as a member ex-officio. Seconded by Dr. Gouley, and carried unanimously."

The following letter was received by Dr. Curtis, bearing date of Feb. 8, 1902:

"FREDERICK C. CURTIS, Secretary.

"DEAR DOCTOR: The action of the Medical Society of the State of New York, as set forth in your communication of the 5th inst., has been referred by me to the Council of the New York State Medical Association, and it has appointed the following Committee of Conference: E. Eliot Harris, Chairman, 33 West Ninety-third St., New York City; Frederick Holme Wiggin, 55 West Thirty-sixth St., New York City; Emil Mayer, 25 East Seventy-seventh St., New York City; Parker Syms, 50 West Forty-seventh St., New York City; and William H. Biggam, 1197 Dean St., Brooklyn, N. Y.

"You will kindly inform your committee of this appointment and state that our committee is now ready to act in accordance with the purposes proposed, and may be addressed through the Chairman, Dr. E. Eliot Harris.

"Yours of the 7th, announcing the committee of the State Society, is received and I have sent the names to Dr. Harris.

"Yours truly,
(Signed) "ALVIN A. HUBBELL,
"President New York State Medical Association."

Upon receipt of this letter Dr. Curtis informed the chairman of your committee of the appointment of a committee by the New York State Medical Association, whereupon, the chairman wrote the following letter to Dr. E. Eliot Harris, Chairman of the Association Committee:

"SYRACUSE, N. Y., March 5, 1902.

"DR. E. ELIOT HARRIS, 33 West Ninety-third St., New York City.

"MY DEAR DOCTOR: Dr. Curtis, the secretary of the Medical Society of the State of New York, advises me of your appointment as chairman of a committee to represent the State Association at a conference with a committee composed of State Society men.

"As I have the honor to be chairman of that committee, I thought it would be wise to write to you concerning the time of our meeting. Beginning on March 13 our Medical College closes for twelve days, during which time it would be convenient for me to give the required time for this work.

"I note that your entire committee is composed of New York men, and as a majority of our men live either in New York or near that city, the meetings in all probability had better be held there.

"Will you kindly let me know at your earliest convenience whether the dates included above would be agreeable to you and to the others of your committee? With many kind regards, I am,

"Sincerely yours,
(Signed) "HENRY L. ELSNER."

In answer the following letter was received:

"February 24, 1902.

"To DR. HENRY L. ELSNER, Chairman Committee on Conference, Medical Society of the State of New York.

"MY DEAR DOCTOR: Your letter of February 21 was this day received. Our committee had already considered favorably the question that all communications between the two committees should be in writing, addressed to the respective chairmen, and that each committee could meet by itself to discuss all subjects pertaining to the work in hand, and its written views sent to the chairman of the other committee.

"It seems to me that this manner of proceeding will not only be time-saving, but will surely be much more desirable in every other particular than by the transaction of these affairs in joint session.

"Therefore permit me to suggest that your committee, through you, send to me the propositions which our committee is to consider.

"Yours very respectfully,
(Signed) "E. ELIOT HARRIS, Chairman."

After consultation with all the members of the Committee on Conference, representing the Medical Society of the State of New York, your chairman sent the following reply:

"SYRACUSE, N. Y., March 5, 1902.

"DR. E. ELIOT HARRIS, Chairman Committee on Conference, Medical Association State of New York.

"MY DEAR DOCTOR: In reply to your letter, bearing date of February 24, addressed to me as Chairman of the Committee on Conference of the Medical Society of the State of New York, in which you make the statement that your 'Committee had already considered favorably the question that all communications between the two societies should be in writing' and that each committee should 'meet by itself to discuss all subjects pertaining to the work in hand, and that its written views' should be 'sent to the chairman of the other committee,' and in which you lead the committee of the Medical Society of the State of New York to conclude that there shall be no conference, but simply correspondence between the two committees through the respective chairmen, I would say that the Committee representing the Medical Society of the State of New York was appointed *to confer, not to correspond,* with a similar committee representing the New York State Medical Association. The committee which I represent feels that the methods of deliberation can only be settled by a joint meeting of both committees in conference, where both sides may be permitted to express themselves freely, and where each side may take into consideration the views of the other, and where both, prompted by a liberal spirit, shall be willing to reach such conclusions as may result from such deliberation. Under no other conditions can the purposes for which we were appointed be accomplished, and the committee which I represent must refuse to act in any other way.

"Awaiting an early reply, I am, for the committee,

"Yours very respectfully,
(Signed) "HENRY L. ELSNER, Chairman."

To which the following answer was received:

"March 9, 1902.

"Henry Elsner, M.D., Chairman of the Conference Committee of the Medical Society of the State of New York.

"My Dear Doctor: I have the honor to acknowledge receipt of your letter of March 5, in which you say 'that the committee representing the Medical Society of the State of New York was appointed to confer and not to correspond, and the committee which I represent must refuse to act in any other way.'

"While the Committee of the New York State Medical Association believes the method of proceeding already suggested by this committee will not only be time-saving, but will surely be desirable in every other particular, nevertheless this committee, in the interest of a united profession in one State medical body, will be glad to meet the committee of the Medical Society of the State of New York at such time and place as may be agreed upon by the two chairmen. I am, for the committee, "Yours very respectfully,

(Signed) "E. Eliot Harris, Chairman."

The chairmen of the respective committees arranged for a joint meeting in the city of New York on March 19, 1902. At this meeting Dr. Henry L. Elsner was made chairman of the joint conference. It was understood by both committees that each was acting without power and that all questions must finally be referred to the respective State bodies for ultimate action and ratification. All the members of both committees were present and the following proposition of the Committee on Conference from the New York State Medical Association to the Committee on Conference of the Medical Society of the State of New York for the union of the two bodies was presented:

"Proposition of the Committee on Conference of the New York State Medical Association to the Committee on Conference of the Medical Society of the State of New York, for union of the two State bodies, presented March 19, 1902.

"Two years ago the New York State Medical Association, founded in 1884, was reorganized under a charter granted by the legislature. Its plan of reorganization is based upon those of several other State medical associations, and has been regarded by the Committee on Reorganization of the American Medical Association as a proper basis for the organization of the American medical profession in the different States.

"The Medical Society of the State of New York, formed under a law of 1806, was changed materially in 1813, after which nearly all the important privileges granted have been repealed by many subsequent acts of the legislature, so that the basis of its existence is, to-day, so involved as to be little understood.

"Therefore, in the spirit of meeting what we believe to be an honest desire to unite the regular medical profession in this State, we propose that the New York State Medical Association and the Medical Society of the State of New York be reconstituted, by an act of the legislature, into a State medical body to be known as the New York State Medical Society, of which all members in good standing in both bodies shall be charter members. The reconstituted State medical body shall be the representative in this State of the American Medical Association, by virtue of acceptance of the constitution and by-laws of the American Medical Association. (Signed) "E. Eliot Harris, Chairman,

"William H. Biggam,
"Emil Mayer,
"Parker Syms,
"Frederick Holme Wiggin."

To which the Committee answered as follows:

"The Committee of the Medical Society of the State of New York acknowledges the receipt of the communication from the Committee on Conference of the New York State Medical Association and begs to reply as follows:

"Proposition of the Committee on Conference of the Medical Society of the State of New York to the Committee on Conference of the New York State Medical Association for union of the two State bodies, presented March 19, 1902.

"In the spirit of meeting what we believe to be an honest desire to unite the regular medical profession in this State, we propose that the New York State Medical Association and the Medical Society of the State of New York, be reorganized by legal union into a single State medical body, to be known as the Medical Society of the State of New York of which all members in good standing in both bodies shall be charter members. The reconstituted State medical body shall be the representative in this State of the American Medical Association by virtue of acceptance of the constitution and by-laws of the American Medical Association, adopted in 1901, except Chapter XV.

(Signed) "Henry L. Elsner, Chairman,
"A. Jacobi,
"A. Van der Veer,
"A. M. Phelps,
"G. R. Fowler."

It will be noticed that the committee representing the Medical Society of the State of New York made use of the words, "legal union," believing that whenever the two societies unite their interests and become a single body, such unification must of necessity follow by *legal means* and in accordance with the laws of the State of New York which laws your committee believed they would be unable to interpret without the advice of counsel. In reply to this communication the Committee representing the New York State Medical Association, submitted the following in writing:

"To the Committee on Conference of the Medical Society of the State of New York, acknowledging the receipt of and in response to its reply to the proposition submitted by the Committee on Conference of the New York State Medical Association.

"The plan of organization of the New York State Medical Association being acceptable to your committee, we will recommend that the reorganized State medical body be known as the Medical Society of the State of New York, and the term legal union be understood to mean applying to the legislature for a new charter.

(Signed) "E. Eliot Harris, Chairman,
"William H. Biggam,
"Emil Mayer,
"Parker Syms,
"Frederick Holme Wiggin."

It will be noted that the Committee of the Association believed that "legal union" necessitated application for a new charter. Upon this point, the committee representing the Medical Society of the State of New York had taken no legal advice. However, your committee insisted that under no circumstances would any action be taken which would for one moment interrupt the existence of the Medical Society of the State of New York.

Your Committee in its answer to the Association committee at the second session of our joint conference on March 19, 1902, added the words, "Except Chapter XV," because it was held by the Association Committee that Chapter XV of the by-laws of the American Medical Association included the original code of medical ethics. Chapter XV of the by-laws of the American Medical Association published in 1901 reads as follows: "These by-laws shall be in effect and force after the close of the annual meeting of 1901, provided, that the sections shall elect delegates during the session for 1901; and provided further, that nothing in these by-laws shall be construed to repeal the rules of the Association governing the relation of members to each other and to the Association."

The third session of both committees was held in the city of New York, at the Academy of Medicine, April 18, 1902, at 3 P.M. There were present Drs. Harris, Biggam, Mayer, Syms and Wiggin, representing the Association and all the members of the committee representing the State Society. At this meeting it was still held by the committee representing the New York State Medical Association that in order to make *legal union* possible, the reorganized society must of necessity apply to the legislature for a new charter. The Association committee at this time and at all other times since its appointment has impressed the committee representing the State Society as being in earnest and equally anxious to bring about the union of the profession of this State, under one banner and at this time assured our committee that in the event of reorganization, the reorganized society, including the association members, would celebrate our one-hundredth anniversary in 1906 in a manner befitting a body with a history such as ours and a record to which all members in the reorganized society might point with just pride.

At this meeting methods of reorganization were considered and a method of reorganization was suggested which had for its basis the reorganization of the regular profession of this State in the Medical Society of the State of New York, which would entitle every member of a County Society to membership in the State Society and in the American Medical Association. At this meeting was also considered the advisability of divorcing the business and ministerial affairs of the State Society from the scientific and referring these to a governing body, very much after the method now followed by the American Medical Association. At both of these meetings the individual members of the committee representing the Medical Society of the State of New York agreed among themselves and in joint session that it would not be advisable for the Medical Society of the State of New York to send delegates to the meeting of the American Medical Association to be held in June, 1902. The minutes of the meetings were signed by the respective chairmen of the committees as an attest of the correctness of the report of the proceedings as they related to the principal matters discussed, without binding either society in any way.

Your committee, realizing the great responsibility reposed upon it, deemed it expedient to take legal advice that it might learn from a recognized authority what measures were necessary to bring about *legal union,* and for that purpose your chairman consulted the Hon. Charles Andrews, Ex-Chief Judge of the Court of Appeals of the State of New York and adds to this report the opinion of this learned counsel. It is as follows:

"The following memorandum has been made on consultation with me and has my approval.

"The Act of 1885, Chapter 379, enables the Medical Society of the State of New York to change its by-laws and create membership upon such a scheme as the society shall approve, without application to the legislature. Chapter 379 of the Act of 1885 reads as follows: 'Section I. The Medical Society of the State of New York shall have the full power to elect such a number of permanent delegates or other members, as may be provided for by the constitution and by-laws of said medical society; said medical society being hereby empowered to regulate and control its own membership.' 'Section II. All acts and parts of acts inconsistent with this act are hereby repealed.' The Medical Society of the State of New York may amend its constitution and by-laws without further legislation by incorporating into its membership all members of the County societies. Therefore, the New York State Medical Association, if it shall so determine, may abandon its present organization and its members may become members of the Medical Society of the State of New York on a change being made by that Society in its conditions of membership. The transfer of the property of the Association may, under the authority of the legislature being obtained, be transferred to the Medical Society of the State of New York. It would seem that if this consolidation shall take place, it is as important to the members of the Association as it is to the Society, that it shall be done without abandonment of the charter of the Medical Society of the State of New York, so as to preserve the continuity of the Society, which for almost one hundred years has existed under its original charter.

"In all such societies, it is generally deemed one of its most important possessions to be able to trace back its history to the earliest possible time and all the members of the consolidated body will be equally interested in being connected with the early charter of the State Society.

"If the Medical Society of the State of New York were compelled to seek a new charter, this Society would be obliterated and a new society would take its place. The only legislation necessary is that affecting the Association and its rights of property.

"Therefore, in answer to the questions referred to me by Dr. Henry L. Elsner, Chairman of the Committee on Conference of the Medical Society of the State of New York, I answer as follows:

"Question I. In order to bring about amalgamation of two bodies organized and chartered as are those which we seek to amalgamate, is it necessary for us to apply for a new charter?

"To this question I answer No.

"Question II. If we reorganize these societies under a new charter, do we cease to exist? In other words, is there a moment of suspended animation?

"I answer this question in the affirmative.

"Question III. If we need not apply for a new charter, must we still go before the legislature to amend our constitution that amalgamation may take place, or has the State Society, under its present charter, power to take in the Association and change its method of organization to correspond with such changes as are finally agreed upon by both bodies?

"To this question, I answer, that it is not necessary to go before the legislature to amend your charter. Legal union may follow whenever the Medical Society of the State of New York shall, by vote, change its conditions of membership.

"Respectfully,

(Signed) "CHAS. ANDREWS.

"Dated Syracuse, N. Y., Dec. 17, 1902."

At the meeting of the American Medical Association, held at Saratoga, June, 1902, Dr. E. E. Harris of New York offered a code of medical ethics which was referred by that body to a committee of five. Section 2 of Art. IV of this proposed code reads as follows:

"The good of the patient being the sole object in view, any physician having a license to practise medicine conferred by a medical board authorized by the State may be aided in consultation."

Your committee would also call your attention to Section 3 of this same Art. IV.

"No physician who indicates to the public that his practice is based on a sectarian system of medicine shall be entitled to professional fellowship or to recognition in medical bodies."

The constitution and by-laws of the American Medical Association adopted at an adjourned meeting of that Association held in Chicago immediately after the Saratoga meeting, no longer contains Chapter XV of the original by-laws. However your Committee has the assurance of the President of the American Medical Association and the committee representing the New York State Medical Association that the old code of ethics of the American Medical Association is still in existence. This information was given to your committee at the meeting of the joint conference held in New York at the Academy of Medicine on Oct. 3, 1902, when the members of the Association once more asked your committee to subscribe to the by-laws of the American Medical Association.

Considering the radical action taken by the Medical Society of the State of New York over twenty years ago, your Committee could not consistently take this step, nor could it suggest to your body submission to a code which changed conditions and the spirit of the times must of necessity efface.

At a meeting of the joint conference held in the city of New York on Dec. 19, 1902, the conference was honored by the presence of Dr. Frank Billings, the President of the American Medical Association, who journeyed from Chicago that he might be present and use his influence in favor of immediate amalgamation. Dr. Billings assured your committee that the old code was still in existence and unchanged. Dr. Billings also assured us, at the same time, that the Code of Ethics of the American Medical Association would not be considered binding upon State organizations.

Your Committee, in spite of the argument in favor of immediate amalgamation, earnestly made by Dr. Billings and the assurance by him and the representatives of the State Association, in affiliation with the American Medical Association, that dropping Chapter XV from the by-laws of the American Medical Association did not eliminate the original code of ethics of the American Medical Association, could not consistently withdraw its objection and assured both the President of the American Medical Association and the Committee representing the New York State Medical Association that the Medical Society of the State of New York was anxious to unite the profession upon a broad and liberal platform, one which it had reason to believe from the encouraging statements made by President Billings and the Association Committee the American Medical Association would adopt at its meeting to be held in New Orleans in May 1903, after which all matters of detail and recommendations to the respective bodies might be promptly and easily made.

In the unification of two powerful State bodies, like the Association and the Society, the method of organization becomes a perplexing question, requiring careful deliberation. Your committee feels that before final recommendations as to the method of organization of the reorganized Society can be made, it must come in the possession of further data. The will of the profession must be learned and given consideration. We ask for the power which shall bring us in contact with the individual members of County Societies that we may gather such information as shall, after mature consideration, lead to the formulation of a plan of reorganization. Among the plans of organization thus far suggested, we might mention,

First.—The scheme by which all members of County Societies become members of the State body, thus abolishing entirely the delegate system. This reorganized State Society to have its various district branches, and a governing body to which shall be referred all matters of business including all ministerial functions.

Second.—Reorganization of the State Society which shall extend to the existing members of the New York State Medical Association permanent membership with a continuance of our County Societies and the delegate system.

Third.—A plan which shall grant to the individual members of County Societies the privilege of permanent membership in the State body, not making such permanent membership in the State body obligatory.

Fourth.—A proposition will in all probability be presented to the American Medical Association at its coming meeting, by which all members of County Societies shall, for a single fee paid to the treasurer of the respective County Society, become members at the same time of the State and National bodies.

The proposed scheme toward which the American Medical Association has been lending its influence tends toward unification of the profession of the entire country and has for its object the extension of its influence and the enrolling in that body, through the County Societies of all regularly educated physicians of this country.

These are a few of the suggestions concerning reorganization which have occurred to your committee. The question requires further thought and we believe that much valuable information can be gained by a thorough canvass of the State.

At the meeting held in the city of New York on December 19, 1902, your committee with all its force objected to the resolution which was presented by Dr. E. D. Ferguson of Troy and unanimously adopted by the New York State Medical Association at its recent annual meeting. It reads as follows:

"Resolved, That the report of the committee appointed to confer with a committee representing the Medical Society of the State of New York, for the purpose of devising a plan for the union of the New York State Medical Association and the Medical Society of the State of New York, is hereby approved.

"Resolved, That the plan presented at the joint sessions of the two committees by the committee representing the Association, whereby 'the New York State Medical Association and the Medical Society of the State of New York be reconstituted by an act of the legislature into a State medical body to be known as the Medical Society of the State of New York, of which all members in good standing in both bodies shall be charter members, and the reconstituted State medical body shall be the representative in this State of the American Medical Association by virtue of its acceptance of the constitution and by-laws of the American Medical Association' is hereby accepted by the New York State Medical Association as an expression of our sincere desire for a union of the medical profession in this State.

"Resolved, That the committee is hereby continued for the purpose of cooperating with any committee from the Medical Society of the State of New York to secure a charter from the legislature at its next session in 1903, which charter shall reconstitute the two State organizations into one State body, as set forth in the preceding resolution, but if the Medical Society of the State of New York shall fail to approve of such plan of union by a charter, to be secured at the approaching session of the legislature in 1903, then this committee shall be considered as discharged, and the proposition of the Association withdrawn.

"Resolved, In case this committee should find occasion to apply to the legislature at its next session for the purpose of securing the said charter, it shall cooperate with the standing Committee on Legislation of this Association."

Your committee could not consent to the time limit insisted upon; it objected to the spirit of the resolution and believed that it was not in keeping with the earnest desire for harmony and unification so forcibly expressed at the various conferences with the committee representing the Association. Your Committee was assured by the Association Committee that its individual members would be ready to use their influence in favor of further conference after favorable action by the American Medical Association at its meeting in New Orleans.

The New York State Medical Association has during the past two years published a journal known as the *New York State Journal of Medicine.* During this time it has also published a medical directory of New York, New Jersey and Connecticut. Both of these have entailed an enormous expenditure of time and money. The medical directory is a worthy publication and speaks volumes for the energy of those who have placed it before the profession of these States. These publications have been losing ventures financially. Thus it will be seen, by reference to the report of the treasurer of the New York State Medical Association, page 337 of the *New York State Journal of Medicine,* December, 1902, that the total expense of publishing the *Journal* is as follows:

Total expense of publishing Journal....	$3,051.73
Incidental expenses	93.29
Total	$3,145.02
Total receipts	2,168.20
Total cost to the Association..........	$976.82
The Directory account is as follows:	
Expense of publishing Directory........	$4,967.54
Incidental expenses	651.97
Total	$5,619.51
Total receipts, only....................	1,783.98
Cost to the Association to date..........	$3,835.53

It will be seen therefore, that the loss to the Association from the publications of the *Journal* and Directory is $4,812.35.

The expenses of the business office of the Association during the year 1901 was $5,693.18. This included rent, $150; salaries, $3,799.84; insurance $20; office incidentals, $1,723.34; making a total of $5,693.18.

The committee feels that if reorganized, the Society would not be able to bear these enormous expenses and could not therefore publish either the Directory or the *Journal.*

While we believe that an official directory of the medical profession of this State should be published annually, we are of the opinion that the work with its associated responsibilities might well be relegated to one of the many publishing houses ready and eager to undertake it, with facilities to make such a publication profitable.

The total expenditures of our State Society, including the publication of our Transactions,—an unbroken file of which to-day represents a possession of which any physician may well be proud—are in the neighborhood of...........	$3,000
The expenses of our business office, including the modest salaries of our treasurer and secretary are between.........................	$500 and $600
Our committees expend about.................	$500
The Transactions cost, including postage.......	$1,200
Cost of the annual meeting, between......	$400 and $500
Stationery, printing, receipts, etc., between	$200 and $300

The incomes of the Medical Society of the State of New York and the New York State Medical Association in the event of reorganization, would be insufficient to meet such expenses as would be necessitated by the publication of the Directory and a monthly journal. It must be remembered that the receipts of the enlarged Society would not equal the combined incomes of the present Association and Society, for there is a surprisingly large proportion of Fellows affiliated with, and paying dues in, both bodies, who in the event of amalgamation, would pay but a single fee.

In reporting progress your committee wishes (I) To file its objection to any method of reorganization which shall in any way interfere with the life of the Medical Society of the State of New York. Therefore we are opposed to any legislative act in connection with the amalgamation of the Medical Profession of the State of New York. The opinion of Judge Andrews makes it clear that no such action is necessary. (II) Your committee having been assured that the old code of ethics of the American Medical Association is still in existence, does not feel that it is within its power to recommend that action be taken by the Medical Society of the State of New York, until the American Medical Association shall make it possible for the Medical Society of the State of New York to subscribe to its constitution and by-laws and written rules of order, consistently, without the sacrifice of principle. (III) The methods of gathering data which shall serve to formulate a plan of organization ultimately to be presented to this body for approval must be evolved after further conference and greater consideration than your committee has as yet been able to give to this important subject. (IV) The Medical Society of the State of New York cannot continue to issue the Directory and the monthly journal, now being published by the New York State Medical Association, in the event of reorganization.

A consideration of this report must prove to your body that this committee is in the midst of its work; that the many perplexing questions connected with the unification cannot be decided at this meeting; that there are many matters of detail which still demand attention and further conference.

For these reasons we beg leave to report progress; ask that our report be received and that further time be given to your Committee on Conference.

Respectfully submitted,
(Signed) Henry L. Elsner, Chairman,
A. Jacobi,
A. Van der Veer.
George Ryerson Fowler.
Frank Van Fleet.

Stegomyia at Baltimore.—At the meeting of the Medical Society of the College of Physicians and Surgeons, a symposium of papers on malaria, yellow fever and mosquitoes was held. Papers were presented by Drs. Hoal, Pagenelli, Melvin, Rosenthal and Hirshberg. From researches recently begun, it would seem that the yellow fever mosquito, *Stegomyia fasciata,* has been found at Sparrow's Point, one of Baltimore's suburbs.

ORIGINAL ARTICLES.

WHAT ADVICE SHOULD BE GIVEN TO A WOMAN SUFFERING FROM FIBROID TUMOR OF THE UTERUS?*

BY J. RIDDLE GOFFE, M.D.,

PROFESSOR OF GYNECOLOGY IN THE NEW YORK POLYCLINIC MEDICAL SCHOOL AND HOSPITAL; VISITING GYNECOLOGIST TO THE NEW YORK CITY HOSPITAL, ETC., ETC.

IT MAY be open to question whether fibroid or myomatous tumor of the uterus, as a disease, is increasing or not. Certain it is that many more of them are observed at the present time than formerly and vastly more cases are presenting themselves for treatment and operation. The multiplicity of cases has attracted increased attention to the condition, with the result that greater accuracy has been infused into statistics, and keener observation into the nature of the growths, their life history and ultimate termination.

According to Bayle, quoted by Bishop, 20 per cent. of all women, after the twenty-fifth year of age, suffer from fibroid, and, according to Klob, 40 per cent. of all women over fifty years of age.

Formerly, fibroids were classed among the harmless growths, and we were taught that, exclusive of polypoid tumors, they were never fatal; that their characteristic symptoms were pain and hemorrhage, and those due to mechanical pressure from their size. Indeed, the first patient upon whom I performed hysterectomy for fibroid tumor (it was a large tumor) had been counseled by one of the most prominent gynecologists of New York, at that time, not to allow any one to operate upon her, for, if she did, she would probably die; but to go to a dentist, have her teeth put in order, so that she could masticate her food and improve her digestion, and then she would live to as ripe an age as anybody. It so happened that the woman, although well past her fortieth year, was a maid, and her hand was being sought in marriage. She felt it necessary to get rid of her protruding abdomen, and hence the application to me for relief. Supravaginal hysterectomy was done, and recovery followed in due time, and marriage as well. I mention this case not to reflect upon the eminent man who gave the advice, but to illustrate the attitude of the Nestors of the profession twenty years ago toward this condition.

We now know that fibroid tumors of the uterus constitute a serious affliction; that they are a frequent cause of sterility; that in many instances they cause miscarriage; that they seriously complicate pregnancy and parturition; that they cause obstruction of the bowel, even producing strangulation; that they are a frequent source of inflammation; that the tumors themselves undergo all forms of degenerative processes, such as calcareous degeneration, necrosis, edematous infiltration, resulting in general sepsis in some instances and sometimes death. The last is, however, confined quite exclusively to submucous fibroids and usually of the polypoid variety.

M. A. Tate, Cincinnati, O., has collected 39 cases of fibroids complicated by pregnancy, from the literature, and reported two which had occurred in his own practice. Analyzing these 41 cases: In six the tumor became gangrenous; hemorrhage was a prominent symptom, in that it occurred in 18 cases; three polyps were expelled spontaneously; seven polyps were removed; in three cases the polyp was not removed; in ten cases the labor was normal; in four cases labor was difficult; in two cases the child had to be destroyed, one was a case of turning and the other a breech; in four cases the tumor was discovered before, in all of the rest after, labor; four cases were reported in which labor set in before time; two were at the fifth and two at the seventh month. The following were the complications reported: Septicemia, 8; measles, 1; puerperal mania, 1; retained placenta, 4 cases. Treatment mentioned: Cold applications, ergot, iodids, whisky, vinegar, cloths in the uterus, packing of uterus with gauze and removal of tumor. Causes of death: Sepsis, 3; hemorrhage, 3; peritonitis, 1, and collapse, 1, making in all 8 cases. If all of the other cases, including nine without histories, recovered, there would be 33 recoveries and eight deaths, a mortality of 19.5 per cent.

While drawing this somewhat melancholy picture of this affliction I am not unmindful of the fact that occasionally fibrous tumors cease to grow and remain stationary for months and years, and even sometimes without any obvious cause decrease in size and even entirely disappear. Such a favorable termination is the rare exception, amounting, as Penrose says, to a medical curiosity.

In addition to the degenerative changes that are likely to occur, frequent and most serious complications of fibroid tumor of the uterus are pyosalpinx and ovarian abscess. The etiological relation between the tumor and the pus formation is not very clear, but the frequency with which this complication occurs in connection with fibroids points to septic infection from some degenerative process and usually of that part of the tumor lying directly in contact with the lining membrane of the uterus.

Another most annoying and serious symptom or complication of fibroid tumors of the uterus is the frequent menorrhagia or metrorrhagia which not only continues during the years of a woman's life that should be most active and useful, but delays the menopause from five to twenty years, the health meantime being not only impaired but in many instances completely wrecked.

With such dangers more or less imminent in all cases of advanced or large tumors, and with the knowledge that such conditions, with rare exceptions, are destined sooner or later to develop, what should be the attitude of the profession toward this condition, and what advice should we, as doctors or surgeons, give to a woman who presents herself afflicted with one of these growths?

Electricity as an agent for the eradication of the neoplasm or as a factor in retarding the growth of these tumors has proved a disappointment, and the very small percentage of cases in which the tumor has disappeared after the application of electricity would lead us to class them among those rare instances in which spontaneous disappearance occurs. Moreover, the serious complications found at operation in cases previously treated by electricity, such as firm adhesions and disseminated pus pockets, rendering relief by operation increasingly difficult and dangerous, as attested by every operator of much experience in this field, condemns electricity as a harmful agent in the treatment of fibroid tumors of the uterus.

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* Read before the New York State Medical Association at the Nineteenth Annual Meeting, Oct. 20-23, 1902.

Curettage as a relief from intra-uterine hemorrhage occasionally is successful, but, as a rule, it requires frequent repetition, and in many instances becomes a dangerous procedure from injury done to the tumor encroaching upon the uterine cavity, thus opening a way for infection and degeneration, and leading in some instances to general sepsis and death.

Perhaps the general question involved in the interrogatory of my paper can be best answered by taking up *seriatim* the various classes of cases as they present themselves. And in this consideration let us not forget that there are immediate symptoms to be relieved as well as the saving of the patient from the possible dire experiences that, if left alone, await her.

Probably we are all agreed at the present time that a woman suffering from a fibroid tumor whose size is sufficient to exaggerate her figure and cause discomfort should be relieved of the neoplasm, and that promptly. Whether this operation should sacrifice the uterus or conserve it would depend somewhat upon the age of the patient and the location and character of the tumor. If the patient has reached or passed the menopause, little consideration need be given to the preservation of her generative organs, and a supravaginal hysterectomy being the simpler procedure, or a panhysterectomy, except in case of pedunculated fibroids, is the operation of choice. But in a woman still in the child-bearing period, especially if she has desire for offspring, the operation of choice is myomectomy, even at the expense of greater risk to the patient and in the face of prolonged and tedious operation.

In the second class of cases let us consider a woman ranging from twenty-five to forty years of age with a small tumor or tumors varying in size from a hen's egg to a cocoanut. What shall we say to her? If she be married, the tumors may be causing sterility; or, if by chance that disability has been overcome, the increased blood supply to the uterus will nourish the tumors and cause them to grow to a size productive of serious complication at parturition. Shall we, therefore, allow this woman to subject herself to such risks, or shall we, by removal of the tumors, anticipate pregnancy and save her from this calamity?

The answer is obvious and the operation should invariably be myomectomy wherever possible.

The indications for myomectomy increase with experience in dealing with these conditions, and growths that seemed on superficial inspection to be coextensive with the uterus are found in many instances to be limited and suitable for removal without ablating the uterus itself.

In this class we have been considering the young married women. Let us take the unmarried women who have hemorrhage or leucorrhea or dysmenorrhea or intermenstrual pain, and in whom examination reveals the presence of a small fibroid in the uterine wall. The course formerly pursued was to meet the symptoms as best might be, and the advice was to wait and see whether the tumor had a tendency to increase, but under no circumstances was the patient to marry. Within the past year a prominent gynecologist has insisted, before a medical society in this city, that the only course to pursue is the waiting policy, and the only advice to give such a woman is to avoid the married state.

To my mind, such advice is not consonant with the present status of surgical progress. To compel a woman, for the simple reason that she has a fibroid tumor of the uterus, by picturing to her the terrors of what might follow, to give up all the sweet companionship of life that comes from the married state, and condemn her to a life of celibacy, when, perchance, the opportunities for home and family and motherhood might otherwise be hers, is a cruelty for which there is no justification. Myomectomy offers such simple and such perfect relief in the hands of the skilful operator that the manly and only true scientific course to pursue is to advise that woman to submit at once to operation. Many of these tumors can be removed per vaginam, thus avoiding the risks of laparotomy and the unsightly scar, and the subsequent hernia.

Within the past three years I have performed myomectomy per vaginam in four cases, three of which have been reported and published. Of these cases, one had a single fibroid the size of a small orange situated in the posterior wall of the uterus just above the internal os. This was complicated by retrodisplacement of the uterus and extensive adhesions. After making an incision into Douglas' pouch and freeing the adhesions as far as they could be reached, the anterior fornix was opened, the remaining adhesions broken up and the uterus, with tumor, delivered into the vagina. Myomectomy was done, the round ligaments shortened to cure the displacement and the uterus restored to the pelvis. This operation was done in October, 1899. The symptoms previous to operation had been annoying in the extreme. The patient had been married ten years, one miscarriage nine years ago, no children, painful menstruation twice each month, lasting seven days; constant backache, nervous, irritable and anemic. She was completely relieved by the operation; she is experiencing normal menstruation and considers herself in perfect health. The second case was the wife of a physician and a physical wreck.

In this case I removed seven subserous fibroids per vaginam, curetted the uterus, repaired an extensively diseased cervix uteri due to bilateral laceration, shortened the round ligaments to cure retrodisplacement, and restored a lacerated perineum. One advantage of myomectomy per vaginam is the facility offered at the same sitting for multiple operations, as were done in this case. The patient had a smooth and comfortable convalescence, and left the sanatorium for her home, 300 miles from New York, on the nineteenth day after the operation. The third case had three small mural fibroids situated in the anterior wall of the uterus, the latter being in a position of extreme retrodisplacement. The tumors were removed through the anterior vaginal incision and the round ligaments shortened as in the previous cases. The fourth case was a counterpart of the first, the tumor being situated in the posterior wall of the uterus and the uterus retroverted and adherent. The same operation was repeated in this case and the result was satisfactory. From a thin, anemic, neurotic young woman afflicted with indigestion and insomnia the patient became a picture of health.

No doubt all of these myomectomies could have been done by laparotomy, but they could not have been done with so great safety to the patients, both immediate and remote, nor could the attendant complications have been dealt with so easily. In young women, especially unmarried women, for obvious reasons, the vaginal method is greatly to be preferred.

But if the tumors are too large to be handled even by morcellation through the vagina, laparotomy will afford facilities for their enucleation, leaving a functionating uterus, and a mind unclouded by a consciousness of mutilation.

The fourth class is one which requires perhaps the nicest judgment of all the conditions with which the surgeon is called upon to meet, viz.: cases of fibroid tumor of the uterus complicated by pregnancy. Here several courses are open to the operator. First, if the case is not too far advanced he can bring on a miscarriage and relieve the uterus of its contents, thus removing the complication and preparing the field for such treatment as might then be indicated. Secondly, the immediate operation of myomectomy is open for performance, leaving the uterus and its contents intact. Many instances have been reported in which the patient, after this operation, has gone to full term and been delivered of a living child. But the woman who submits to it has to face the danger of a probable subsequent miscarriage. The third course is to allow the patient to go to full term, with the understanding that if dystocia occurs Cesarean section may be performed and a living child secured.

To my mind, the dangers of this condition have been somewhat exaggerated. In my early experience as a physician I attended in confinement many colored women who harbored fibroid tumors, and in no one of them did anything more serious occur during delivery than a delayed expression of the placenta.

Within the past year I have had a patient under my care who had formerly had a fibroid tumor of the uterus complicated by pregnancy. She was advised to go to full term and submit to a Cesarean section, which she did and secured a living child. Myomectomy was performed at the same time and she still retains her uterus. While this patient was under my observation for other cause than that under discussion, a patient was referred to me who was suffering from a fibroid tumor complicated by pregnancy, advanced to about the fourth month. While the main body of the uterus had risen above the rim of the pelvis, the tumor itself was caught under the promontory of the sacrum and resisted all effort to elevate it into the abdominal cavity. The desire for offspring was so strong in both the woman and her husband that they were ready to take any risk to secure a living child, but wanted to do it in the least dangerous and most certain way. After considering all the consequences in the case, my advice was to allow pregnancy to go to full term, and to prepare for the probable performance of Cesarean section. To this they finally consented, but when the allotted time had expired labor pains came on and the child was delivered naturally.

To sum up the situation, then, the proper treatment for fibroid tumor of the uterus, speaking in a broad way, is removal by operation, and that, too, immediately, whether the tumor be large or whether it be small, whether it be in a married woman or in a single woman, excepting from this rule only women of very advanced years, and those in which the tumor is complicated by pregnancy. In the last the course to pursue will depend largely upon the circumstances and conditions of the individual patient. As a rule, however, I believe that the majority of cases of fibroid tumor of the uterus complicated by pregnancy will go to full term and be delivered normally. In the hands of an expert, Cesarean section at full term is safer for mother and child than myomectomy during gestation in the rare instances in which such an extremity is required. I mean that it is better to take the risk of such a procedure, the necessity of which is very remote, than to destroy the child by inducing miscarriage or taking the risks of myomectomy.

EYE-STRAIN.

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Owing to our zeal for progress, civilized life of the present day is strenuous in its nature and debilitating in its influence. The vigorous and untiring efforts that are put forth in the performance of our various duties tax our powers of endurance to the utmost and materially lessen our ability to resist disease. As most of the work is of an intellectual nature, it follows that much of the strain falls upon the eyes, and their keenness becomes dim long before the other senses are impaired. From our very infancy the eyes are called upon to undertake an amount of labor that is often in excess of their ability to achieve.

Weak eyes were formerly regarded as indicative of age and the consequent natural failing of the faculties; but nowadays the condition is widespread and affects persons of all ages. Uncivilized people, who do not apply the eyes for near work, never suffer from defects of vision. Their sight is as clear as that of the birds and remains so until they are bent with age.

It is estimated that nowhere do so many people suffer from eye-strain as in New York City, a fact attributed to the tall buildings and the density of the population. In many buildings the daylight is so dim that artificial light must be used throughout the entire day. The effort to do work under this disadvantage, combined with the strain of business anxiety and possibly a vitiated atmosphere, is soon attended by the enfeeblement of those parts that are used most—the eyes. Even the wealthy are not exempt. Many of them are compelled to make their homes in apartment houses, where a family suite is often nothing more than a hole in the wall, and the bad effects of insufficient light and deficient ventilation are very trying upon the eyes. The fashion of shrouding the windows of workrooms with curtains and dark shades is also injurious. The furniture, carpets and wall-paper are kept from fading, but this is done at the expense of the sight.

Eye-strain usually has its beginning in childhood, when the delicacy of the eyes exposes them to harmful influences that make no impression upon the eyes of adults. The fact that 80 per cent. of our school children have some ocular defect should admonish us to be on the alert to check the progress of eye disease by timely attention.

The common custom of compelling children of tender age to load their young minds with excessive learning is a serious mistake. Children should not be taught to take the exactions of school life too seriously, but should be permitted to spend much of their time in recreation. Study ought always to be interspersed with exercise. This takes off the nervous strain from the eyes and allows the physical development to catch up with the mental; preventing a top-heaviness and insuring the building up of a sound and healthy body, the very foundation of good sight.

Many of our children have their mental powers taxed to the utmost by an ever-increasing list of studies which they do not comprehend and which are soon forgotten. This course can be followed by but one result—weak eyes and delicate health. A delicate constitution and poor sight are so intimately associated that the physical development of a child is a fairly faithful criterion of the state of its eyes.

Practical education is a desirable acquirement, but young and growing children should not be overburdened with an amount of study that will stunt their growth and dwarf their natural faculties. Ill prepared for the struggle of life is a person whose sole advantage lies in the possession of a massive intellect. Such an individual is likely to be afflicted with a delicate physique, troublesome eyes and round shoulders.

All persons who use the eyes to any great extent for near work are apt to suffer from eye-strain; for the activities of the eyes call for a large expenditure of nerve force. It is easy to understand how eye-strain produces headaches and other nervous disorders, even epilepsy, when we consider the complicated arrangement of the nerves of the eyes and their proximity to the brain. These considerations also explain why mental concentration and application are difficult and distressing when eye-strain is present.

Headaches are the most common as well as the most tantalizing accompaniments of eye-strain that physicians are called upon to treat. At times they cause such misery and general incapacity that they become a material hindrance to health and happiness and make the pursuit of an occupation impossible. All headaches that are brought on by using the eyes or are intensified by their use, can be put down as due to eye-strain, and no permanent relief can be expected until the strain is cured. Thousands suffer from eye-strain without knowing it. They go about their duties and appear in excellent health, yet they are disturbed by headaches and other petty annoyances without an apparent reason. Because they can see well they think that the eyes are perfect; the fact is, they unconsciously strain the eyes in order to see as clearly as they do.

Most people, when they have a headache, hasten to a drug store and procure some headache powders which give relief by lulling the pain. The ease that is afforded, however, is usually of short duration, and the distress soon returns with increased severity and to quiet it, the sufferer is forced to take a larger dose of medicine. This oft-repeated taking of drugs soon leads to the objectionable drug habit, which is quite prevalent in large cities and from which it is difficult to free the enslaved victim. Most of the so-called headache cures are positively harmful if they are taken repeatedly. They contain some form of bromide or other depressant, which weakens the heart, destroys the appetite and makes a person sickly and nervous.

It often happens that a sufferer from eye-strain, wearied by his vain endeavors to obtain relief from a persistent headache, concludes that the eyes are at the bottom of the trouble; but instead of going to a physician and having his eyes examined, he directs his steps to the store of the nearest optician, where he chooses in a haphazard way the glasses through which he sees best. In many cases these glasses are not at all suited to his eyes and are incapable of easing the strain.

Eye-strain is particularly troublesome at night, when artificial light is used. At first the sight is good and a person can read with ease and comfort, but gradually the sight begins to fade and the print becomes blurred and indistinct. The eyes ache, they feel heavy, tired and sore and they fill with tears and wink continually. This uneasiness continues to increase until it becomes unbearable, finally compelling one to lay aside the object that has engaged the attention and either to close and rest the eyes or else to turn the attention to something less tiring.

Eye-strain is caused by the ciliary muscle of the eye becoming strained and fatigued. This occurs in astigmatism, hypermetropia and in myopia. Weakness of the muscles of the eyes is accountable for much eye-strain, but this weakness is in turn usually dependent upon a hyperopia or a myopia. Exophoria is the most common form of muscular weakness; here the external ocular muscles are relaxed and cause a convergence of the eyes.

In order to see clearly, the rays of light, as they enter the eye must converge and come to a focus directly upon the retina. The near-sighted eye is too deep to permit of this, and the light comes to a focus before it reaches that point. On the other hand the far-sighted eye is too shallow, and the light comes to a focus behind the retina. In each case the eye is out of focus and the sight is poor. In astigmatism the cornea or else the lens is not perfectly symmetrical. As a result of this inequality of surface, the rays of light are not brought to a common focus as in the healthy eye, but converge at different distances and form two images at right angles to each other. To a person with astigmatism, all objects look confused and dull. Letters and figures may appear misshapen and to slant, and round objects like the moon seem oval. If such a person looks at two black lines which cross each other at right angles on a paper, and the paper is turned around, one of the lines is seen with perfect clearness but the other is indistinct.

There is a certain distance from the eye at which an object nearby can be seen better than at any other point. In the healthy eye this distance is about 18 inches and this should be the distance at which a book ought to be held. Near-sighted persons cannot see well at this distance, because the focus of the eye is too short, so they overcome the difficulty by bringing the object nearer to the eyes, or within that distance which will insure the focus being thrown upon the retina and giving clear sight. Conversely, a far-sighted person cannot bring the focus upon the retina unless the object is held far off and this distance is too great to allow small objects to be seen with clearness unless the accommodation is taxed and the eye is strained.

A healthy eye can see in the distance with as much ease and clearness as it can nearby. A near-sighted eye cannot do this. It sees near objects with tolerable clearness, but the sight for distance is poor. With a far-sighted eye the conditions are reversed; objects far away can be clearly seen, but small things close by, like the print of a book, are not plain.

Near-sightedness, although sometimes inherited, is usually brought on in youth by the excessive use of the eyes in study. It is generally met with in the upper walks of life; among students and other persons of culture, who habitually use the eyes for reading and lead a sedentary and enervating life. As a rule it first makes its presence felt between the tenth and twentieth years of age, when the eyes first begin to be used in hard and earnest study. It may increase up to the twenty-fourth year but after that time it remains stationary.

The eyes of a near-sighted person bulge somewhat. The pupils are large and the face is drawn and strained, from the habit of partially closing the eyes to keep out the excess of light. Near-sighted individuals can see nothing clearly that is more than a few feet away. When they read, they hold a book close to the eyes and in such a manner as to get as much light upon it as possible. They are prone to write in a small, cramped hand, and they prefer to read fine print. An object a few yards off looks to them dim and obscure and seems much larger than it really is. Near-sighted eyes are generally irritable and sensitive, especially to the effects of artificial light, which inflames and tires them. The eyes ache and feel sore when they are used for a long time, and black spots frequently appear before them.

Many persons reach middle-life without knowing that they are near-sighted until they chance to look through the glasses of a near-sighted friend and are surprised and delighted to find that they can see better with them than with the naked eye. They may have known that they could not see well in the theater nor read a sign across the street, but because they could read small print, if it was held close to the eyes, they thought the sight was not to be improved with glasses.

Far-sightedness dates from birth. Nearly all babes are far-sighted, but as they grow older the far-sightedness diminishes and eventually has a tendency to disappear altogether. In many instances an eye that is far-sighted in infancy becomes near-sighted in youth. Pronounced far-sightedness in young children is apt to be accompanied by a convergent squint. These children are not as bright as other children and at times are even dull and stupid.

A slight amount of hyperopia in a person who is otherwise in good health may not give rise to any inconvenience, but if the system is weakened by disease or else depressed by indoor living and a want of fresh air and exercise, the far-sightedness is likely to be very harassing. This in a measure accounts for the languor and sick headaches from which females who are anemic and nervous so often suffer.

Far-sightedness is particularly troublesome to growing children. They are frequently blamed for being backward and not wanting to learn, when the real fault lies in the fact that they cannot see clearly. Many far-sighted persons reach the age of twenty-five or thirty years and yet suffer no inconvenience, but if they lead an inactive life, the hyperopia will sooner or later give rise to disturbances that make the wearing of glasses imperative.

After the forty-fifth year of age, all eyes have a tendency to become flattened, and the change is attended by a failing of the sight. This is the far-sightedness of old age. When this comes on, objects close by, like the print of a newspaper, can be seen with difficulty, but objects in the distance are as clear as ever. In this condition it is not unusual that a person in middle-life can tell the time by the clock, but not by the watch. The age at which the eyes begin to fail is not fixed. With some people it occurs before the forty-fifth year and with others it does not take place until after the fiftieth year.

Whenever persons of middle-age unconsciously move nearer the light when they read or sew, and at the same time hold the object quite a distance away from the eyes; or when the print looks dull, and the eyes seem heavy and strained and a feeling of drowsiness comes on, they are evidently suffering from the far-sightedness of age and need glasses to rest the eyes and assist the vision.

Occasionally we meet an aged person who can read or sew without glasses. Such persons have evidently been near-sighted in their youth, but as they have grown older the natural inclination of the eye to become far-sighted has been offset by their short-sightedness; so that in their old age the eyes are in a measure like those of a healthy young adult. Then again, it sometimes happens that a person has one eye which is natural and another which is short-sighted. The healthy eye is used for near work up to the time of middle life, and when it begins to fail, the near-sighted eye can be utilized, for by this time the change which it has undergone enables it to take the place of the disabled eye.

The natural way to relieve eye-strain is to give the eyes absolute rest for a period of time ranging from a few days to some weeks. The objection to this method is that it is both costly and inconvenient and the relief is but temporary, hence it becomes the part of wisdom to assist nature, and by means of glasses, and by attention to the health and avoidance of the conditions that have led up to the strain, to endeavor to accomplish a lasting cure. It is not always an easy matter to decide upon the glasses with which we may hope to cure a persistent eye-strain, and frequently a slight amount of uncorrected astigmatism will cause more annoyance than a high degree of myopia or hyperopia. Astigmatism is accountable for many nervous disorders that appear to have no connection with the eye. In a number of instances even attacks of epilepsy have entirely ceased after the astigmatism has been corrected with glasses.

The use of eyeglasses dates from as far back as the thirteenth century, but they did not come into general use until some centuries later, and it was not until the latter part of the nineteenth century that the selection of glasses became a science and received the careful attention of the physician.

In civilized society the number of persons who wear glasses is large, but the number who should wear them, but do not, is much larger. It is rightly said that the intelligence of a community can be judged by the number of spectacled persons it contains; for the more cultured the community the more near-sighted the inhabitants. Many individuals have an ill-founded aversion to glasses which cannot be overcome. Their pride or prejudice gets the better of their good sense and they would rather suffer from the annoyances of eye-strain than wear glasses. A common complaint is that when once worn, glasses cannot readily be discarded. Often this is true, for glasses are to weak eyes what shoes are to tender feet, and so long as they rest the eyes and ease the strain, it is proof that they are required.

As soon as we discover that a child has an optical defect, glasses should be provided for it. This prompt course will assist in restoring the sight and will prevent the many sequelæ of weak eyes. A child can begin to wear glasses after the fourth year, the constancy with which they are to be worn depending upon the seriousness of the complaint. If a child has a high degree of hyperopia and squints, the glasses must be worn constantly until the eyes are straight and the sight has been restored. If this is not done, the squinting eye, from want of use, will become practically useless. The giving of glasses to children ought to be supplemented with such hygienic measures as will prevent the return of the eye-strain. The child should be taught to sit upright and not stoop over the desk, nor bring the book closer to the eyes than 15 inches. The light should come from behind; the amount of study should be limited, and the health should be improved by means of nutritious food, outdoor exercise, gymnastics, and tonics. Most young adults who suffer from eye-strain, obtain the desired relief by the use of mild resting glasses. These glasses do not materially assist the vision, but they bring relief by taking the strain from the eyes.

As a rule near-sighted persons require glasses for distance only. They can see near objects by holding them close to the eyes, but occasionally the myopia is so great that a book cannot be read unless it is held but a few inches away. In this case an extra pair of glasses is necessary for reading. No one who suffers severely from myopia should engage in work that demands the incessant use of the eyes, if such a course can be avoided; for this is likely to increase the myopia and intensify the suffering.

Glasses for elderly people should be selected with reference to the use for which they are intended. If they are to be used for reading or sewing, they should be of a strength whereby a book can be read at a distance of 15 inches from the eye. A musician or an artist requires a pair that will give distinct vision at a distance of from two to three feet. When the selection of glasses is left to a person who has not worn them before, a pair is usually chosen which is too strong and likely to hurt the eyes. On the other hand, many middle-aged people are actuated with a desire to conceal their age, and they injure the eyes by reading without glasses. Since the far-sightedness of age increases with advancing years, the glasses ought to be changed every few years and stronger ones given. If it becomes necessary to change them too often, we should suspect the presence either of cataract or of glaucoma, diseases that can be benefited by an operation only.

Much of the comfort and relief that glasses confer are dependent upon the skill with which they are selected and upon the manner in which they are adjusted to the eyes. It is not uncommon to see a person, especially a child, looking over the glasses instead of through them. Glasses should be worn as close to the eyes as possible without touching the lashes. If they are not properly fitted they may intensify the very strain, for the relief of which they were intended.

A FATAL CASE OF POLYARTHRITIS COMPLICATED BY CHOREIFORM SYMPTOMS AND VEGETATIVE ENDOCARDITIS.

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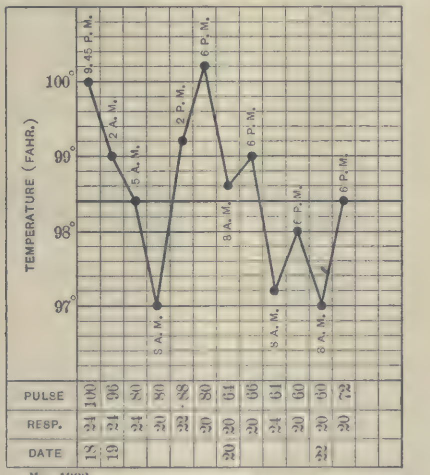
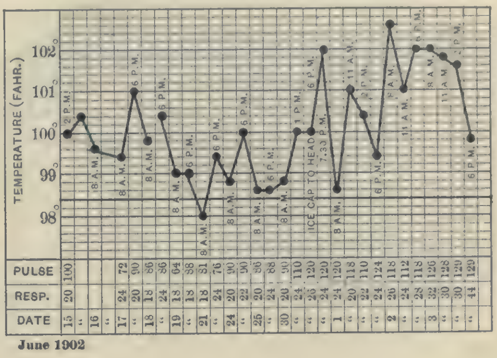
A YOUNG man, seventeen years old, was admitted to the medical wards of the Philadelphia Hospital on May 18, 1902, with a history of having suffered for two weeks with pain in various joints, beginning in one knee, then invading the other knee and next extending to the ankles, and finally appearing in the elbows. He had slight elevation of temperature—not exceeding 100.2° F.—and corresponding acceleration of pulse and respiration (see Chart I). The only abnormality noted on physical examination was a "hemic heart murmur" and a bruit in the vessels of the neck. Urine contained neither albumin nor sugar.



The family history was unimportant except for the statement that a sister had been subject to rheumatism and had died in an attack of chorea; and the only significant point in the personal history was a previous attack of "rheumatism." With rest in bed and administration of salicylates the youth improved, and at the end of a week he was so far recovered as to request his dismissal, and he was discharged on May 26. He was, however, readmitted on June 15, again complaining of pain in various joints—knees, ankles, wrists—that had set in soon after his return home and had been present since. There was also some stiffness and swelling, and the patient was sweating freely. He had had a fainting attack the night before entering the hospital. Apart from harsh breathing and a few dry râles, no physical abnormality was detected. The patient was noted to be nervous and emotional, and on the twenty-first he began to sob and cry for long periods at a time. His restlessness gradually increased and he became unable to sleep. He tossed about violently and at times attempted to get out of bed. He cried out loudly in an inarticulate manner. The hands and feet were in almost continuous choreiform movement. The knee-jerks at this time were found enfeebled and the plantar reflex absent on the left and present on the right. The patient gradually grew weaker and finally died from exhaustion early on the morning of July 4. The temperature fluctuated in the neighborhood of 100° F. for the first four days, becoming normal on the morning of the fifth. It rose slightly, however, on the following day, and it subsequently pursued an irregular course, reaching its highest—102.6° F.—on the tenth day. Pulse and respiration pursued a corresponding course, but toward the close became greatly exaggerated, reaching 129 and 44 respectively (see Chart II). The urine yielded a slight reaction for albumin.



On post-mortem examination rigor mortis was present. The pupils were equal. Both lower extremities were deflected to the left and there was fairly well marked talipes equinus varus. The joints of the lower extremities were not obviously enlarged, although the right wrist appeared fuller than the left. The muscles, on section, were exceedingly dark. The peritoneum was smooth and glistening and the abdominal cavity contained no excess of fluid. The mesenteric glands were slightly enlarged and soft, and some were hemorrhagic. The right lung was congested and bound down by old adhesions. The heart was not increased in size. Its epicardial surface was smooth, the musculature dark brown in color, with yellow mottling beneath the endocardium. The wall of the left ventricle was slightly thickened, but the cavities of the heart were normal. The tricuspid and pulmonary valves also were normal. The mitral valve was thickened, and along the free edge of its leaflets dark-gray translucent vegetations were visible. The aortic leaflets exhibited somewhat similar bunches of vegetations immediately below the corpora arantii. Some of the vegetations were about the size of a pea. Otherwise the valves were delicate and smooth. The spleen was slightly enlarged and soft. Its surface was smooth and dark violet in color. On section it presented a purplish red appearance. Its substance was soft, but not friable. The Malpighian bodies and the visible trabeculæ were not increased. The liver was fairly large, smooth and soft. Its surface was red with yellow mottling. Its cut surface was smooth and its lobules were fairly well marked. The periphery was yellowish, the center somewhat congested. The capsules of the kidneys stripped readily, leaving a smooth surface. On section the cortex appeared increased and the entire surface was cloudy and gray. The striæ were fairly well marked and the glomeruli generally were injected. The common bile duct and the gall-bladder were normal, although the former was obstructed by an enlarged gland near the duodenum. The stomach was congested. The esophagus and the intestines were normal, as were also the pancreas, the adrenals, the bladder and the prostate. The right wrist was opened and the cartilaginous extremity of the radius and the ulna exposed. The joint contained no excess of fluid and the cartilaginous surface appeared normal. The synovial membrane was, perhaps, a little hyperplastic, though delicate. The related tendons and sheaths were normal. The brain and cord were put aside for examination, but in consequence of some defect in technic factitious cavities developed. Careful macroscopical and microscopical examination by Dr. D. J. McCarthy failed to disclose any abnormality.

This case is interesting by reason of the association of polyarthritis, choreiform symptoms and endocarditis. I prefer to speak of "polyarthritis" rather than "rheumatism," and of "choreiform symptoms" rather than of "chorea." Rheumatism represents but one form—I am inclined to believe a specific form—of polyarthritis, but the differential criteria of the several varieties are as yet too uncertain to permit of dogmatism in this connection. It is all but certain that rheumatism is an infectious disease, and it seems probable that it is dependent upon one of the several cocci that have been isolated from the affected joints and endocardium, and some of which it has been possible to cultivate upon artificial media and by injection of cultures produce arthritis and endocarditis in lower animals, the same organisms again being obtained. Chorea likewise is looked upon as an infectious disease, but nothing is known definitely of the exciting cause. The frequent association of articular symptoms and valvular lesions of the heart with chorea is strongly suggestive of a close etiological relation between this disease and polyarthritis, possibly rheumatism, but whether the exciting agent is the same in both instances, obviously cannot be determined in the present state of knowledge.

It is to be regretted that no bacteriological investigation was undertaken in the case here reported, as it might have been possible by this means to have determined the etiological factors and to have shed some light upon the general subjects of chorea and rheumatism and the relations, if any, that exist between these two affections. We have learned that various cocci may each give rise to a number of distinct lesions and it may eventually be found that rheumatism and chorea merely represent different localizations of the same infection. This apparently is the view held by Leonard Guthrie (*British Medical Journal,* May 18, 1901), who suggests that chorea is not a disease in itself, but merely a manifestation of rheumatism. A concrete instance of this relationship is reported by Westphal, Wassermann and Malkoff (*Berliner klinische Wochenschrift,* 1899, No. 29), who record a case of acute articular rheumatism, followed by chorea, and complicated by endocarditis, in which they succeeded in isolating from the blood, the brain and the endocardial vegetations a streptococcus capable of exciting polyarthritis in lower animals.

M. Reichardt (*Deutsches Archiv für klinische Medicin,* 72. B., 5. u. 6. H., p. 504) has recently recorded the results of post-mortem examination in two fatal cases of chorea, one occurring in the sequence of an attack of rheumatism. In both vegetative endocarditis was present, *Staphylococcus aureus* being isolated from the heart's blood in one case and cocci in masses and chains from the vegetations in the other. In both also inflammation, hemorrhage and degeneration of nerve-fibers in the central nervous system were found on histologic examination.

PROSTATIC CALCULI: WITH REPORT OF A CASE.*

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On February 28, 1901, I had the pleasure of seeing a patient in consultation for my friend, Dr. Paffard of Brooklyn, in whom the diagnosis of dermoid cyst of the perineum had been made. He was a male, twenty-three years of age, from whom the following anamnesis was obtained: A family history perfectly negative in regard to anything that might have any bearing upon his present condition. He was an electrician by occupation and an amateur boxer. About one year before his visit to me some fluid was discovered trickling down his right thigh; upon observation he found that it came from a small spot on the right of his perineum. Although he had no injury nor venereal disease before this time, upon close questioning he recollected that for a time a sense of fulness and discomfort was present in this region; as a result of his seeking medical advice he was twice subjected to operative procedure, in the period of twelve months preceding his visit to me. Both were unsuccessful. Upon one of these occasions two stones or masses were removed that resembled teeth, hence the dermoid diagnosis, but upon subjecting these masses to a dentist they were claimed to be phosphatic accumulations. The patient also said that on occasion there was an increase in the flow of urine from the opening, which he felt confident was larger than before the first operation. He also said that he had seen no more foreign bodies nor felt them.

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*Read before the Genito-Urinary Section of the Academy.

Upon examination I found a two-inch scar and a fistulous opening of good size presenting in the right half of his perineum and above and over the mid-portion of the transversus perinæl muscle. Upon passing a probe a gritty sensation was observed within one-quarter inch of the skin, and a few drops of clear fluid were extruded.

A tentative diagnosis of a urinary fistula was made and operative procedure was advised and accepted. Within the week he came to my service for operation. A probe was passed into the fistulous tract as far as possible. Obstruction to its complete entry was due to impact with some gritty substance.

Then the right half of the perineum was incised in the line of the old scar, a pair of artery clamps introduced part way into the opening of the fistula and then the blades separated so as to produce dilatation of the orifice. Upon sponging a highly polished brown-yellow body resembling in shape a caraway seed was seen and removed; immediately behind this a pocket was found containing ten or twelve of these bodies varying in shape and size. These and many more were cleared out until finally I was able to introduce the index finger into what evidently was the right lobe of the prostate; from here on the probe passed directly into the bladder. Upon taking stock, fifty stones, varying in size from a caraway to a pumpkin seed, were found, while a few the size and shape of duck-shot were also present. These were all of uniform brown-yellow color and polished to such a degree as to lead one to think they had been subjected to a coat of varnish.

The fibrous tract of the fistula was dissected out and an unsuccessful attempt to close it by suture and by drainage was made. The patient was discharged in a week's time, being utterly unmanageable. Late reports from him are to the effect of his still having his fistula, but no stones have been observed since the day of his last operation.

A few days ago this patient was sent me by his physician at my request. An examination revealed a sinus discharging urine, attempts at passing a probe into the bladder were impossible, he consented to another operation, which was done two weeks ago. The entire fistulous tract was dissected out, a ligature tied about its proximal end amounting practically to a lateral tie of the prostatic urethra, and the wound closed with skin drain. He has now a perfect result. While dissecting out the fistula we were surprised to find a mass of cheesy substance and some hairs in the excised material. The prostate upon examination presented a crescentic loss of substance in the right lobe of the prostate, so that its bulk was but one-half the size of that on the left side. The loss of substance on the right is readily accounted for by the pressure disturbance from the collection of calculi secured. The dermoid material, sebaceous matter and hair may have been the result of what originally was said to have been a dermoid or a coincident inversion cyst following the former operation that had been performed four years previously.

If we exclude those cases in which a calculus or calculi are found in the prostatic portion of the bladder and the urethra, or rather limit our discussion to those cases in which a calculus or calculi are found in the substance of the prostate itself, we are struck with the relative infrequency of this condition.

Calculi found in the prostatic portion of the bladder or urethra are usually of large size, rough, formed by successive layers of salt deposits, and are usually found in the extremely young or in patients of middle and advanced life, and usually accompanied with marked urinary and bladder symptoms.

While the true prostatic calculi are found in the young adult, they are usually numerous, are largely phosphatic throughout except possibly an organic centre, and present a peculiar yellow or brown-yellow highly glazed appearance. They do not give rise to bladder or urinary symptoms excepting when they perforate the bladder or urethra.

The origin of these calculi is practically that of a calcareous degeneration of some previous inflammatory condition affecting the cell element of the prostatic acini. These cells first undergo an amyloid change, forming the corpora amylacea, and the latter bodies finally undergo calcareous change. Subsequent additional deposits produce the increase in size of the calculi. This condition may affect only a small portion of the prostate, or it may involve from one-half to the entire prostatic body. By contact pressure, absorption of the intervening fibrous or muscular prostatic tissue takes place, cystic cavities containing numerous calculi (as in the case reported above) are formed, or by the invasion of infecting organisms abscesses may be formed and these in turn may rupture in one of four directions: either through the rectum, urethra, perineum, or into the bladder. Again, perforation may occur without the formation of pus as evidently took place in the case recorded.

The diagnosis is usually accidental, as these bodies lie dormant for a long time. The passing of an instrument into the urethra scrapes over one or more of these protruding through the prostatic urethra, or the examining finger in the rectum will detect them; again, as a result of perforating into the bladder, the stream of urine will wash them out.

Treatment is distinctly operative and consists in making any of the accepted incisions for attacking the prostate.

Before the patient comes out of the anesthesic state, a careful search or washing of the bladder should be made, so that none of these calculi may be left in the bladder to form a nucleus for a vesical stone.

THE FACTS IN A CASE OF HEMATURIA.

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THE patient, an Armenian by birth, was admitted to the hospital Oct. 30, 1902; age 40; occupation farmer; family history negative.

Four years ago he was engaged in the work of carrying merchandise, and noticed one day while urinating that the urine was very dark in color, which was found upon examination to be due to the presence of blood. He sought medical advice in Smyrna without benefit. His trouble was then alleged to be due to stone in the bladder. Operation was suggested but was rejected by him. The hematuria has continued without cessation up to the present time.

One year ago he began to urinate once or twice during the night and about every three hours during the day. This has also continued up to the present time. He has never had a chill or febrile attack. The general appearance is anemic. There is no elevation of temperature; no pulmonary or cardiac lesion. He states that he sleeps well and that his appetite is good and the bowels regular. The urine when passed in two glasses is found to be uniformly bloody. The blood does not precede nor follow urination. It is freely mixed with the urine; and not of a smoky hue.

Combined lumbar and abdominal palpation on the left side is negative. On the right side the lower pole of the kidney is felt, and there is seemingly a mild amount of tenderness to pressure. Rectal examination finds the prostate not enlarged. The bladder is searched for stone and none found. Posterior-urethral endoscopic exploration is negative.

In preparation for cystoscopic examination the bladder is now injected with 1,000: 16,000 adrenalin chloride solution; retained ten minutes, and then with two-per-cent. solution of cocaine, which is retained six minutes; after which the bladder is filled with a two-per-cent. boric solution.

In spite of the adrenalin, the field of vision becomes quickly obscured by the continuous mixture of blood, and at this examination it is not satisfactorily determined whether or not the blood oozes from the walls of the bladder or from the mouth of one of the ureters. The local anesthesia is insufficient and the patient is becoming rebellious; the examination is therefore terminated.

A specimen of urine was then sent to the laboratory, the report of which states: Reaction, acid; sediment, moderately marked; albumin, trace; urea, about two per cent.; specific gravity, 1.024; sugar, negative.

Examination of sediment shows large amount of blood forming bulk of deposit; no pus; small amount of mucus; no casts; no tubercle bacilli; a few epithelial cells from bladder. The laboratory report is summed up in the accompanying remarks: "The trace of albumin present seems accounted for by the blood. The gravity and relative amount of urea are within normal limits, and the microscopical examination fails to show elements referable to a lesion of the renal parenchyma or pelvis. In fact, the specimen fails to show any microscopical evidences indicating the seat of the hematuria; but its general character leads to the belief that it is probably in the bladder or prostate."

Following this urinary report and as a result of the observations made up to that time, I was inclined to the belief that the lesion was in the bladder; but had not satisfied myself that such was the case, on account of the inability to discover a stone or a neoplastic growth, and on account of the absence of such bladder symptoms as would naturally accompany either one or the other of these maladies. Yet the appearance of the blood in the urine was more that of a mixture of blood and urine than of blood in the urine, which by intimate mingling had become a portion of the urinary secretion.

After the expiration of several days (Nov. 4), a second cystoscopic examination was conducted under general anesthesia; the bladder having been first washed and a 1,000: 16,000 solution of adrenalin chloride injected and retained for seven minutes. At this examination a successful view was obtained. Both ureteral orifices were promptly brought into view, and a most satisfactory cystoscopic picture was demonstrated.

While the right ureteral orifice was kept in the field, repeated jets of bloody urine were seen to emit from the ureteral orifice. The secretion of the right kidney was so active, or the bleeding was so free that there was only about five seconds' intermission between the jets. The field of vision was soon clouded; but, by continuous washing of the bladder, repetitions of this view were easily obtained and demonstrated to the satisfaction of several of the assisting surgeons. The left ureter was then observed, and was seen to emit urine unstained with blood.

On account of the satisfactory result of the ocular observation, a systematic attempt to catheterize both ureters was not made.

The facts derived from the foregoing diagnostic study demonstrated that the lesion was located in the right kidney, and that the cause was some incipient morbid condition not revealed in the urine, or a neoplastic growth, or possibly gummata.

In deference to the latter possibility and on account of a vague specific history, the patient was placed upon an anti-syphilitic course of treatment, which was pushed to full tolerance and continued for one week's time. At the end of this period there was no evidence of betterment, and an operation was suggested and accepted.

November 14, patient, under anesthesia, is placed in the prone abdominal position upon an Edebohls inflated bag. An incision was made from the twelfth rib downward and outward.

The kidney was exposed with great facility and brought outside of the wound. In general size and contour it was normal. The capsule was split along its convex border and the kidney opened into the pelvis in a search for stone; none being found. A catheter was then passed through the ureter down to the bladder without finding any obstruction. In fact, there was nothing about the general contour or gross substance of the organ which conveys satisfactory evidence of the cause of the trouble.

There was one spot on the anterior surface of the kidney, near the pelvis, about the size of a penny, which seemed somewhat more dense than the remaining portion of the organ. This was incised, and a small piece removed for microscopical examination.

A small gauze drain was inserted in the kidney, and another larger piece was placed under the organ for support. The wound was closed except at its upper portion.

The patient sustained the operation well, and twenty-four hours later, the urine contained a striking decrease in the amount of blood. Three days after the operation the urine, for the first time contained a marked deposit of pus, evidently derived from the kidney and the seat of operation. On the fourth day there was still no return of the hematuria, and even the drainage from the wound, which naturally contained a quantity of urine, was practically free from blood.

The result of the pathological examination by Dr. F. M. Jeffries of the small piece exsected for this purpose is as follows: "The bit of tissue received presents a series of lesions, none of which may be said to be extensive. Perhaps the most marked departure from the normal are the parenchymatous and fatty degenerations, which are diffuse in character. Noticeable also is a slight congestion, both in the interstitium and the glomeruli, and a few small areas of hemorrhage into tubules. Two or three areas of hyalin degeneration are present, and one or two hyalin casts were found in situ. There are no evidences of either acute or chronic interstitial inflammations. The tissues were so fresh when received that the structures are maintained in an excellent state of preservation. The diagnosis resulting from the microscopical study of the sections is chronic parenchymatous nephritis."

The noteworthy features in this case are: The hematuria of four years' duration with a relatively small amount of deterioration in general health; the negative result of the laboratory urinary analysis; the satisfactory cystoscopic picture; the absence of morbid appearance presented in the gross showing of the kidney at the operation; the microscopic evidence of kidney lesion; and the prompt cessation of hematuria following operation.

TRAP-DRUMMER'S NEUROSIS: A HITHERTO UNDESCRIBED OCCUPATION DISEASE.

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THE strenuous life of our times is bringing forward a lot of new occupation neuroses, notwithstanding the fact that many of the older ones are disappearing under a more enlightened understanding of their causes, and the general lightening of the load of mankind by the use of machinery. As a class, these affections are little understood, and as entities often pass unrecognized. They should be more carefully studied, classified, and it follows, better treated.

Believing that the following case is deserving of record, and absolutely unique so far as my own experience and search through literature reveals, a brief report is felt to be worthy of printer's ink.

C. H. V., male, white, aged forty-one years, married, and has three healthy children; was recently referred to me by Dr. Marcus Rosenwasser. The patient was born in one of the French Cantons of Switzerland, and for twenty years has pursued the occupation of a trap-drummer. For the last two years he has been playing in a vaudeville theater which gives two exhibitions each day of the week except Sunday. Also on Monday he is compelled to practise in addition to the two regular performances. This practice, he informs me, is equal to one of the heaviest evening performances. He also states that his kind of work in a vaudeville theater is excessively heavy, requiring great rapidity and strength. His drum is beaten, as the name would suggest, by the operation of a pedal which is manipulated with his right foot, this gives him use of both hands to play the other drums, triangle and the various traps; hence the names, *trap-drum* and *trap-drummer*.

One year ago he began to have a cramping pain and sense of great exhaustion in the muscles, which, from his description, seems to have been located in the tibialis anticus and peronei of the right leg. In addition to this he experienced a feeling of constriction of the leg, as if the circulation had been stopped. Soon after this he began to have a sensation of heat in the knee-cap, also a painful sensation in the same area. He now complains bitterly of a burning pain in the knee. This is only apparent while playing or while walking rapidly. During the former he is compelled to stretch the leg often, and finally hit upon the expedient of raising his chair as a means of securing an easier position of the leg. While these measures gave some relief they were not permanent. His greatest pain and difficulty is experienced while working with great rapidity. He states that each stroke requires from five to twenty pounds pressure, and sometimes a rapidity of movement equal to 150 or 180 strokes per minute. In the midst of one of these performances he suffers great pain on the left side of the right knee cap, which radiates about the whole knee. A sense of constriction is felt in the whole leg, and a cramped, distressing sensation of pain and exhaustion is experienced in the anterior muscular groups. After some hours of hard work the whole leg feels heavy, numb and lifeless.

Examination.—Patient is a well-developed man; all of his vegetative functions seem to be normally performed. His reflexes are normal; there is no loss of sensation, and outside of being addicted to excessive cigarette smoking I can find no psychopathic stigmata. The limbs are perfectly symmetrical, the right leg, however, is better developed than the left, the tibialis anticus and peronei being larger than their fellows of the opposite side. Also the intrinsic muscles of the right foot seem to be better developed than the left. The electrical formulæ are normal, but he experiences something of the same pain and cramp-like feeling following contractions induced by the faradic current.

After his first visit, I placed my heel upon the floor and attempted to make rapid and continued downward movements of the elevated foot. I soon experienced a sense of exhaustion of the anterior tibial group with a sense of heat and burning in those muscles as well as on the inside of the knee. The latter sensation persisted for some time. When he again visited me I caused him to assume a like position and work the left foot rapidly and continuously, when he discovered that he had produced a set of sensations on the left side analogous to those which appeared in the right leg while playing his drum. This convinced him of the correctness of my diagnosis, which he confessed of having previously doubted.

In all of these exhaustion or occupation neuroses we recognize the liability of any set of muscles to become affected by paralysis, cramps, or abnormal sensory sensations while engaged in continuously performing a set of movements that are the result of cerebral volition and attention, and which from their nature cannot be cared for by the automatic centers of the cord.

A motor and a sensory type is discernible. The motor type embraces those which are characterized by a peculiar paralysis or a cramp-like seizure of the affected muscles whenever the interdicted act is attempted. The sensory varieties usually appear as a paresthesia or as neuralgiform pain. These varieties are rarely pure. Hardly a case presents itself in which we cannot discover two or three sets of symptoms characteristic of the mentioned subdivisions.

The technic of the occupation of the trap-drummer furnishes all of the necessary elements for the production of an occupation neurosis. It is a series of educated movements, a rare development of kinesthesis in a set of muscles whose centers are very low in the cord and whose volitional stimuli travel farther than any others in the body. These stimuli are complexly derived by the way of the oculo-cortical apparatus, and by a volitional effort are transmitted to the motor cortex. Such a degree of precision and nicety of irregularity, yet always under perfect control, is demanded in the practice of this art that it is little wonder exhaustion of the cortical centers should occur.

The treatment of occupation neurosis is most discouraging. My recommendation in this case to attempt the use of the left foot is being carried out with apparent success.

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EXPERIMENTS WITH A NEW QUININE DERIVATIVE.

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MY attention was called to saloquinine through reports in German medical journals about one year ago. The main feature of the remedy which interested me at once was the claim that it could be used as a substitute for the salts of quinine, in cases in which the latter were contraindicated on account of their well-known disadvantages.

Thinking that this new product might obviate their objections, I waited for an opportunity, and securing a supply began using it whenever indicated. Although I feel, as a rule, prejudiced against new products of modern chemistry contesting the value of old well-tried ones, the results in this instance were even better than I had anticipated, as will be recognized from the clinical notes which I have kept of such cases as remained under my personal observation long enough to permit the formation of an opinion. The results in the other cases have not all become known to me.

I gave saloquinine a trial in a variety of cases, no matter whether its use was strictly justified or its indication merely arbitrary. But even when there is an absolute indication for quinine as in the different forms of malarial fever, the use of the drug must often be avoided on account of certain concomitant conditions. Whenever we meet with patients suffering from acute or subacute disease of the middle ear, or from gastrointestinal irritation which quinine may easily increase, or with persons in whom quite small doses produce severe symptoms of cinchonism, we shall be glad to have a reliable preparation which can take the place of quinine salts, and under these circumstances should not hesitate to prescribe saloquinine.

Case I.—Intermittent malarial fever of the tertian type. Mr. S., thirty-two years old, medium height, well-nourished, muscular, ailing for the last three days, complained of loss of appetite and pain in the back, drowsiness and general malaise. I saw him on August 10, after he had had a severe chill the day before at about five P.M., lasting 40 minutes. He has never had malarial fever before. After the chill he had become very restless and noticed "a fever ran through his whole body," as he described it. His face had become particularly hot, with throbbing in his temples and headache, keeping him awake for several hours on the night of August 9. When I saw the patient, 24 hours after the paroxysm, he had the appearance of weariness in striking contrast to his usual activity and bright looks. He complained of a general feeling of weakness and soreness, as if he had been beaten, and of slight headache. I made but a short examination regarding the special features of the case and found the temperature to be 98.6° F., the pulse 80, of good quality, without signs of fever. The spleen could be palpated without difficulty and was found, on percussion, to exceed four inches in a vertical line of the area of dulness.

The only medication that the patient had taken was a mild laxative which at the same time was said to contain a small quantity of quinine, but the dose had been so small that the amount of quinine contained in it can be considered as practically inert. I prescribed saloquinine, 15 grains, pulv. tal. dos. No. X, one powder every four hours for the whole of the following day; after this three powders every day until the last symptom of weariness and nervousness should have disappeared. As the powders could not be secured before late Monday afternoon, patient had a paroxysm of exactly the same character as two days before and at the same hour. At that time I succeeded in demonstrating in a fresh specimen of blood the segmenting forms of the tertian type of malarial plasmodia. Temperature 104.4° F., pulse 110. He took one powder in the evening and slept fairly well. He had been directed to stay in bed until he had finished all the powders. On the following day of intermission he took four powders and one more on the next morning (at seven o'clock) the day of the expected paroxysm. Because "he felt so much better that day," he discontinued the powders, and was lucky enough to be spared another chill. The day after that he returned to his work and has been well ever since.

The patient had had two well-pronounced paroxysms of tertian malarial fever, the etiology of a mosquito bite also being demonstrable. He took six powders within 36 hours, taking them dry followed by a swallow of water. The last 15 grains of saloquinine were administered 10 hours before the expected paroxysm, which is quite in conformity with the method of Dr. W. E. Fitch* (*International Medical Magazine,* April, 1902). It has always been my rule to give quinine as a prophylactic between the paroxysms, and that saloquinine in the case here reported has had such a prophylactic effect, must be considered beyond any doubt. Although my patient took 90 grains before the next expected paroxysm, I should perhaps have been justified in expecting another mild chill before the paroxysmal symptoms would cease altogether. As the enlargement of the spleen could still be demonstrated on the evening of August 14, three days after the second paroxysm, I advised the patient to continue the powders as first directed.

Case II.—Double tertian malarial fever. C. W., boy, aged eighteen years, medium height, weight 120 pounds, slender build, mail-carrier in country town, has had malarial fever about seven or eight times during the last three years. Acute albuminuria had been present during the last two attacks of fever, six weeks and 11 months before. I saw the patient on August 10, after three days' sickness with double tertian fever, and after he had taken one dozen of two-grain quinine pills the day before. The night I saw him, at about nine o'clock, he had had a paroxysm of three hours' duration, and was perspiring very freely. I told him to stop the quinine and left five saloquinine powders, 15 grains each, with directions to take four during the night and one the following morning. Examination of the urine showed no albumin. He had no chills on the eleventh and twelfth, but his skin was still pale with a yellowish hue, the expression dull, the tongue markedly coated, appetite poor. On the twelfth he complained of pains generally, and weakness. I prescribed tinc. nuc. vomic., one dram; tinct. gentian comp., two ozs.; syrup hypophosph., ad., three ozs.; S., one dram three times a day; and saloquinine, 15 grains, pulv. tal. dos. No. XII, one powder three times a day. The patient took only three powders each day on August 13, and 14. As he felt very much improved on the fifteenth, he went back to his work. On the morning of August 19 I was called again, because he had had a severe chill the night before and passed a little blood with his urine in the morning. He took three 15-grain powders during the 12 hours after the onset of this last paroxysm. The remaining three powders I withheld purposely. Examination of the urine in the morning showed only a few granular casts, partly studded with erythrocytes. In a fresh specimen of blood I found two groups of the *Plasmodium malariæ,* pigmented granules, living hyaline forms, swollen red blood corpuscles; no plasmodia in the erythrocytes of the urine. At about 4 P.M. on August 19 the patient became nauseated and complained of severe headache. When I arrived at about 5 P.M., he made the impression resembling a yellow-fever subject, although more pallid and not with the characteristic lemon hue, complaining of pain in the calves, his skin cool and yellow, the tongue thickly coated and red beneath. While I was taking the temperature, which was 105° F., the patient shivered violently, the face and finger nails becoming cyanotic. The pulse was hard and bounding, 125 beats per minute. The spleen was very large and soft. The urine was scanty, dark, and bloody. Its examination showed pale and dark granular and epithelial casts. The patient was given 30 grains of saloquinine in one dose, and directed to take 15 grains three hours after this, to be repeated every hour, thus receiving 180 grains of the drug from 6 o'clock P.M. August 19 to 5 A.M., August 20, when the last hourly dosis was taken. At 9 A.M. another 15 grains were given as a preventive and hereafter medication was withdrawn. On that day no paroxysm occurred, the patient passing a very good night and doing perfectly well during the twenty-first. That day he drank about 20 ounces of fresh milk and took 15 ounces of chicken broth at 4 P.M. The 15-grain powders were continued from the twenty-first, four powders every day for three days, and two powders per day during the twenty-fourth and twenty-fifth. The symptoms of nephritis had disappeared by the twenty-fourth and there had been no more paroxysms of the malarial fever since the twentieth. No plasmodia in the blood could be discovered since the twenty-first.

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* Dr. Fitch says: "In quotidian fever the drug should be administered eight hours before the next expected chill. In tertian fever it should be administered 12 hours before the expected paroxysm."

In this case the superiority of saloquinine can be easily demonstrated. Quinine, 24 grains, had had no effect at all, while 60 grains of saloquinine (the corresponding effective doses of the salts of quinine) must be assumed to have manifested a remarkable prophylactic power, since the paroxysm expected about eight hours after the last powder had been taken, did *not* occur. The same good prophylactic and curative effect must be attributed to the continued administration of the powders during and after the recidival paroxysms of quotidian fever, no other medication besides having been used, except the above mentioned stomachic. The nephritis was also influenced favorably, or at least the large quantities of saloquinine—a little over eight drams were taken within six days—failed to cause any irritation to the kidneys as the same amount of the usual quinine salts would certainly have done.

Case III.—Mrs. H. H., aged twenty-seven years, tall muscular, well-built brunette, had never suffered from any disease except troubles peculiar to her sex. She had had two miscarriages, three and two years ago. Her only child, a healthy boy, is four years old. Six weeks ago Mrs. H. had taken some kind of nostrum pills in order to cure an annoying amenorrhea of a few days' duration according to her statement. The consequences had been intense abdominal cramps and a menorrhagia which had lasted for nine days, with paroxysmal abdominal and pelvic pains, vomiting and diarrhea. Vomiting and occasional uterine and intestinal pains had persisted for almost three weeks. When I first saw the patient on July 19, the intestinal symptoms had subsided, while the miscarriage, suggested by the initial pelvic symptoms, was still incomplete, as I concluded from the pains described by the patient as labor pains which had started in 12 hours before. On examination I found a dark-colored apparently nonpurulent discharge and the cervix uteri covered with a yellowish-brown membrane. The body of the womb presented the size, shape and consistence of a uterus pregnant about 10 weeks, being alternately in the state of contraction or soft and elastic. The patient accepted my advice to prepare herself for an eventual operation. She was admitted to the Emergency Hospital of Jersey City the same night, where we removed the remnants of the abortus under the usual precautions by means of placental forceps and curette. The patient made an uneventful recovery and was able to be taken home on the evening of the sixth day after the operation.

On July 26 she sustained an external injury about four inches below the naval and two and one-half inches to the left of the median line. According to her statement she also used a vaginal douche of doubtful character. On the evening of July 27 she was taken with a chill followed by a marked rise of temperature, remained in bed on the following day with much fever, severe headache, and felt as if she was going to die. I was called in on July 29, and asked Dr. R. W. Brayton of the Emergency Hospital to see the patient with me. When we arrived at the bedside at 5 P.M. we found the patient rather prostrated, her face sallow and sunken with a dull expression, a rapid pulse of 120, the temperature 105.2° F., the respiration 30. In the left lateral hypogastrium the skin showed a discoloration of the size of a pea, as from a contusion sustained a few days before. There was marked tenderness on pressure and crepitation on touch. No discharge from the vagina. On vaginal examination I found the cervix closed, the body of the uterus slightly swollen, the organ in dextroversion; an elastic tumor in the left parametrium. Diagnosis: Septicemia, metritis, parametritis of the left lateral ligament, peritonitis.

I at once gave 10 grains of calomel and a prolonged intra-uterine douche of two quarts of a three-per-cent. creolin solution. I ordered a large hot water enema to be given two hours later, cold sponging every two hours and ice bags on the forehead and abdomen. Brandy one tablespoonful was administered every half hour. For nourishment the patient received two ounces of coffee with a little milk every morning, clam broth or beef-tea five ounces, and the whites of four eggs, besides some iced milk during the day. During the first four days of my attendance the temperature did not rise beyond 105° F. in the evenings with morning remissions of 2.4 or 2.6° F.; the pulse averaged about 110, ranging between 100 and 115, and remaining of good quality. There were six evacuations of the bowels on the average within every 24 hours. Urine was passed spontaneously and quite freely without the use of a catheter. Besides the cold sponging and the ice I did not order any antipyretic measures until August 2 at 10 P.M., when the temperature ran up to 105.8° F. and the pulse to 130. The urine had been scanty and dark during the last 12 hours. Then I decided immediately on saloquinine and ordered 15 grain powders to be given, one powder every hour. Besides I gave the patient 25 drops of the plain tincture of opium at 11 P.M. She was very restless during the night, tossing about a great deal, but slept for almost one hour after another 25 drops of the opium at 2 A.M. On August 3 at 11 A.M. the temperature was 101.3° F., the pulse 108. The catheter was now used and the patient passed 11 ounces of a dark, somewhat cloudy urine within 12 hours. There was some diarrhea and vomiting for the following three days, tympanites, and crepitation on touch could be demonstrated in the whole of the left lateral hypochondrium. On August 4 examination per vaginam showed the parametritis diffused through the whole pelvis and the uterus firmly impacted in the exudations. No fluctuation could be felt. The patient could not bear anything but peptonized milk and toast water. Brandy was stopped since it caused vomiting, and instead we gave her strychnine (one-thirtieth grain) hypodermically every four hours for the next 24 hours. Ice bags were continued. Under the use of saloquinine, 60 grains since 8 A.M., the temperature had not risen beyond 103° F. on August 3 at 7:30 P.M., and went down to 102° F. on August 4 at noon when the drug was stopped for 10 hours. Then the temperature rose again to 104.4° F. at 9 P.M. The pulse was 100, 106, and 100 respectively, regular and of good quality.

On August 5 at 1 A.M. I gave morphine one-half grain hypodermically which caused the patient to sleep for two hours. During the day she had sherry wine with beef, in the form of panopeptone, one tablespoonful every hour, as her only nourishment, since everything else was rejected by the stomach. The abdomen was much distended and the intestines tympanitic; the patient weak and distressed, cyanotic and comatose most of the time. The pulse was feeble, but regular, not falling below 100 nor exceeding 108, the temperature changing very little, from 103.6° F. at 1 A.M. to 102.6° F. at 9 A.M. and remaining at 103 from noon to midnight. At midnight one-thirtieth grain of strychnine; saloquinine 165 grains within the last 24 hours.

On August 6 the patient rallied, passed large quantities of a dark-colored but limpid urine and experienced much relief from the repeated passing of wind. At noon the temperature had fallen to 102° F. and did not rise beyond 104° F. at midnight. Total quantity of saloquinine given was 105 grains in 24 hours. The pulse was of better quality than the day before and did not exceed 110 at midnight. The vomiting had ceased entirely and the peptonized milk was accepted again, 12 ounces every four hours, the panopeptone being continued as before. The tenderness of the abdomen was less pronounced than before.

On August 7 at 11 A.M. an internal examination showed a rather hard, resistent tumor in the left lateral ligament, a more elastic tumor in the right parametrium. The symptom of crepitation had entirely disappeared. Temperature at 11 A.M. 101.2° F., pulse 100, of good quality. In the afternoon arrangements were made to transfer the patient to a hospital. Since then I have lost track of the case.

In this special case the antipyretic influence of saloquinine on the temperature is quite conspicuous. On August 2 the temperature had risen to almost 106° F., and 12 hours later after 120 grains of the drug had been taken it went down 4.5° F., a longer remission than any within the four preceding days. The effect of the large doses persisted during the following 11 hours, as comparatively little saloquinine was given during that time; the temperature did not rise beyond 103° F. To make the antipyretic effect still more evident, the steady rise of the temperature during 22 hours on August 4, when only 30 grains were given during the first half of the day, is very interesting, and after 450 grains (about 30 grams) of the drug had been given within four days, up to 12 P.M. of August 6, the temperature 101.2° F. on August 7, took its lowest drop during the ten days of my attendance on the case. Also the tonic effect of saloquinine is evident, especially when we take notice of how low the patient was the day after the drug was withdrawn, how she began to improve after its reinstatement, and how the kidneys were stimulated through its action.

Case IV.—A. G., aged fifty-one years, laborer, of neurasthenic disposition, temperate, but poorly nourished and anemic, has suffered for the last year with hyperesthesia of the mucous membrane of the bowels, especially of the colon. When he called me on September 2, his wife informed me that he had had cramps of the same kind three times before during the last 12 months (one year ago I had seen him myself) and that they lasted as a rule from two to three days.

I found the patient in bed in the characteristic posture, the body being doubled forward, with his right hand pressing on the abdomen and complaining of intense abdominal pain. Pulse 78, rather tense; temperature 99° F., the patient having had three soft stools within the last three hours and having vomited three hours ago. There was no nausea when I saw him, the only complaint being the colic which had begun suddenly and was becoming unbearable during the last half hour. The pain was felt mostly in the left hypochondrium, radiating in the front to the hypogastrium and in the back to the left lumbar region. There was no tympanites. The urine proved on examination to be entirely free from any indication of disease. Its passage caused a slight burning sensation which had been annoying to the patient for several days. Diagnosis: Enteralgia.

Having tried saloquinine before in cases of neuralgia, I left five powders of 15 grains each to be taken every two hours, while the most acute pain was being relieved by pressure.

After having taken three powders he went to sleep and did not awake until the end of six hours, when he felt a desire to urinate. He got up and passed 20 ounces of urine with perfect freedom and without the annoying sensation of the days before. He then took the two remaining powders, and when I saw him at noon was well and cheerful and without any complaint. He said that he had never before passed through an attack of cramps so easily.

Case V.—P. H., a business man, aged thirty years, neurasthenic, who had typhoid fever nine years ago and has been in relatively good health ever since. There was an indefinite history of attacks of malarial fever. He cannot bear any quinine, and I have observed on two occasions that one dose of 10 grains of a salt of quinine produced pronounced cinchonism. On September 5 at 9 P.M., I gave him 30 grains of saloquinine in one dose with a swallow of water, for no special ailment. The drug manifested its effect twelve hours later, after the patient had had a good night's rest. On the following morning he complained of a slight dizziness, informed that he had passed more urine than is usual with him and asked me if I had given him any quinine in his powder. There was not the slightest irritation of the stomach.

I mention this case for the information of those who might entertain the least doubt as to whether the quinine in saloquinine exerts any effect or not, and will add that in all the cases where I have given saloquinine (nine) there was never any objection to its taste; the drug, not being soluble on the tongue, has no taste at all.

From the clinical observations as reported above I should draw the following conclusions: The first two cases reported demonstrate beyond any doubt how well this new derivative of quinine can take the place of quinine in malarial fever, the larger doses being no objection on account of the non-irritating properties of saloquinine. In Case III, where in the course of the disease an acute gastritis develops, it seemed that the drug had even exerted a beneficial influence on the gastric innervation, vomiting being stopped when the use of the powder was resumed after an interruption of ten hours. The analgesic action is apparent from Cases IV and V. Cases III, IV, and V bear evidence of the remarkable influence which saloquinine has on diuresis.

MEDICAL PROGRESS.

MEDICINE.

Typhoid Gangrene.—This is a very rare complication of typhoid fever fortunately, and only a few cases have ever been noted, but its possibility should never be forgotten. C. E. Nammack (Med. Rec., Dec. 27, 1902) reports an extreme case in which both legs and thighs were rapidly involved up to the inguinal region, but the genital organs and the buttocks escaped. An autopsy was not allowed, but it was thought that the cause of the gangrene was an arterial thrombosis of autochthonous origin, involving the aorta at its bifurcation. The gangrene was at first dry in character and not accompanied with pain, but later became moist, and the distress necessitated the use of morphine. The dry gangrene began in the feet and spread upward to the final line of demarcation. The change to the moist variety began above at this line and spread downward. Cultures from the blood were negative. This complication is more frequent during the second and third weeks of a typhoid. The cause of gangrene is an obstruction to the circulation, which depends upon four factors: (1) The altered blood, (2) the weakened heart, (3) the mechanical difficulties of the circulation in distant parts, and (4) the local effects of the bacillus itself. Four different varieties of obstruction may exist, and sometimes coexist: (*a*) Arterial thrombi of cardiac origin; (*b*) autochthonous thrombi in the arteries; or (*c*) in the veins, and (*d*) thrombi in the small peripheral vessels.

Dysphasia or Aphasia in Tuberculous Meningitis.—This disease, as is well known, is characteristically protean in its onset. Its first indications may appear fulminatingly in a strangeness or wildness of manner or in sudden impairments of memory or defects of speech. From this sudden type there are all gradations down to the slowest and most chronic form. M. McIntyre Sinclair of Glasgow (Brit. Med. Jour., Dec. 20, 1902) details an interesting case in which aphasia was an initial symptom of tuberculous meningitis. A most interesting characteristic of tuberculous aphasia seems to be that the patient becomes completely aphasic after indulging in a few minutes conversation, and the aphasia thus produced passes off in its turn after an interval of repose. This is similar to a case of Dr. Hinshelwood under the name of "Dyslexia," in which his patient suddenly became word-blind after correctly reading a few lines of print. These conditions show an induction of rapid cerebral fatigue that might conceivably have been produced either by direct pressure of the tuberculous exudate on the nerve elements themselves or by an interference with the nutrient arterial supply. These conditions of phasic exhaustion are not fitly termed aphasia, but should be described as dysphasic. Gowers, indeed, has described a condition called "paroxysmal lameness," in which the patient becomes intermittently lame in the course of a walk. This is supposed to be due to some arterial degeneration in the cord or brain. The author would insist that the occurrence of aphasia or of dysphasia in a person already suffering from any form of tuberculous disease should be looked upon with grave suspicion and interpreted as indicative of meningial involvement.

Atonic Gastric Insufficiency and Dilatation.—Of all the commoner forms of dyspepsia in women, and, indeed in some men, there is no doubt that this is the most frequent. Robert Saundby of the University of Birmingham (Brit. Med. Jour., Nov. 29, 1902), describes the method recommended for diagnosis of this condition by Dr. Eric Meinert of Dresden. This consists of 120 grains of sodium bicarbonate and 90 grains of tartaric acid, these quantities being dissolved separately and given successively. There is nothing new about the use of these two drugs, except the quantity which is at least quadruple the dose ordinarily advocated. It seems to the author a much more certain way than distending the stomach with air. The etiology of the condition he considers under the following heads: First, age. In males the disease seems rarely to begin before thirty, and although most common between that period and fifty it frequently persists throughout life. In women, on the other hand, it begins earlier and almost always ceases after fifty. The influence of marriage upon this condition affords little to comment upon, except that the number of single women is somewhat higher. This may, however, be explained by the fact that most of the author's cases belong to the middle class, in which the married women led comparatively easy lives, while many of the single women were clerks, etc., who suffered from overwork. In the past history of the patient, dyspepsia accounted for 42 per cent., neurasthenia for 29 per cent. Indeed only 10 per cent. can be looked upon as due to pyloric obstruction. In establishing a diagnosis, he does not look upon the stomach as dilated unless it reaches below the level of the umbilicus, only slightly dilated if to the level of the anterior superior spines. Markedly dilated below that line and half way to the pubes, while anything lower than this, he regards as "extreme dilatation." Based upon this classification he finds 15 per cent. were slight, 55 marked and 30 per cent. extreme, so that in 85 per cent. the great curvature reached far below the level of the anterior superior spines. Of the symptoms, pain was by far the most common, it being markedly present in 68 per cent. There seems to be no relation between the amount of pain and the degree of dilatation. It varies in position and in its relation to food, but it was most common in the epigastrium and after eating. Very rarely it was relieved by taking food. Vomiting, a factor which one would expect to be prominent, was insignificant in the author's series, being only 16 per cent., and curiously enough it is more common among men than women. The loss of weight was a prominent factor in 34 per cent., but although this symptom is of great importance, it is a difficult one to establish beyond peradventure, because very few women know what their normal weight is. It is, of course, more prominent in those cases of dilatation due to obstruction than to atony, because the former condition is so frequently malignant. Constipation and diarrhea were not so constant as the author had supposed. The first condition was present in about 20 per cent., while the latter was found in only about two or three per cent. Flatulence is extremely common, and there is no doubt that it was largely the cause of the pain. It may be due to fermentation and the formation of carbon dioxide, olefiant gas or marsh gas, but it is frequently present where there is no indication of unusually fermentative changes. Its presence in these cases must, therefore, be explained by the supposition that air is either directly swallowed or carried down with the bolus of food on account of lack of tone in the esophagus. The tongue was furred in only 15 per cent. of the cases, and this condition was more frequent among men. Other subsidiary symptoms were water brash, headache and anorexia. The chemistry of the dilated stomach shows free hydrochloric acid present in 60 per cent. of cases, absent in 40 per cent., in excess in 6 per cent. and deficient in 10 per cent. Peptic digestion was normal in 60 per cent., weak in 34 per cent. and absent in 12 per cent. Starch digestion was normal in 90 per cent., and in the remaining ten the erythrodextrine reaction was present. Lactic acid was present in 95 per cent. Sarcinæ were present only in four per cent., one of which was a case of cancer. Torulæ was slightly more frequent. The prognosis of these cases must be guarded. It improves with the youth of the patient and the history of an acute attack. But some of the most pronounced cases show an improvement under judicious treatment, which is truly astonishing. The author has found electricity to be of no use, and depends entirely upon a modified Weir-Mitchell course. At the end of six weeks of such treatment, there is usually a pronounced improvement, if not a cure, but in a proportion of the cases, the operation of gastro-enterostomy is so eminently rational and so free from danger that no careful observer can deprecate its value. Nevertheless this method of enforced rest for the paretic stomach often fails to give relief.

Rectal Feeding.—A series of interesting observations have lately been made on the value of rectal feeding by D. L. EDSALL and C. W. MILLER (Univ. Penn. Med. Bull., Vol. XV, No. 11). Two patients afflicted with gastric ulcer, in whom rectal feeding was imperatively indicated, were given three nutritive enemas daily, consisting of 400 c.c. of milk and six eggs, with salt and predigested by pancreatin. The nitrogen and fat of the food and then of the urine and feces were carefully estimated. It was found that the amounts absorbed were far less than the demands of the patients, and the condition of the urinary nitrogen demonstrated that the tissues were suffering. About 40 per cent. of nitrogenous food and 30 per cent. of fat were absorbed. The water in the enema probably contributes the favorable item. The fact that patients may occasionally be kept nourished in this way is probably due to the previous gradual reduction of the food intake, and therefore a gradual reduction in their metabolic demands. Enough food may thus be provided to prevent tissue loss, but this merely amounts to keeping the patient from losing ground when he is already in a condition of decided subnutrition. Usually the imperfect absorption of food administered per rectum supplies only a very small part of the amount of nourishment necessary in order to maintain a nutritive equilibrium.

Tracheoscopy and Bronchoscopy.—A description of the tubes devised by Killian, for the direct examination and treatment of the trachea and bronchi is contributed by E. J. MOURE (Jour. de Méd. de Bordeaux, Dec. 14, 1902). These are rigid tubes constructed much on the lines of the oral speculum, but of greater length, and in sizes varying with the age of the patient, and provided with a straight branch at the top at a right angle to the tube, by which it may be held by the operator; the light being thrown into the tube by a specially devised illuminating apparatus. The tube may be introduced through the tracheal orifice of a patient previously subjected to tracheotomy, or through the larynx; the epiglottis and base of the tongue being strongly depressed, and the head inclined backward. In the latter method, the patient is placed in a horizontal position and usually chloroformed; the operator taking his position back of the patient's head. This method of exploration may be utilized not only in the diagnosis of morbid conditions, but also for the local treatment of circumscribed tuberculous and syphilitic lesions, and for the removal of benign tumors. The extraction of foreign bodies is also facilitated by this means, a hook of greater length than the tube being used for the purpose. If the condition of the mucosa be masked by the secretions, these may be removed with swabs or, if excessive, by an aspirating pump devised by Killian.

Some Questions Relating to Acetone.—The influence of fats upon the elimination of acetone has been carefully studied in ten diabetics by G. SATTA (Rif. Med., Dec. 22, 1902), who finds that in mild cases, acetone-production is very slightly increased by ingestion of fats; but in severe cases the effect is very marked; an increased elimination of acetone to the amount of 1 gm. being seen, if but 12 to 15 gm. of butter be taken. Beta oxybutyric acid was also increased by butter in both mild and severe cases; the increase being most striking in severe cases. The increase in elimination of acetone induced by other fats, such as olive oil, beef fat, etc., was from one-fourth to one-third less than when butter was used.

A New Method of Percussion of the Spleen in Infants.—The usual methods having been found unsatisfactory by F. SARCINELLI (Rif. Med., Dec. 20, 1902), he has devised a method of percussion which he finds especially well adapted to the examination of the spleen in infants; he thus describes it: An assistant holds the patient up in a horizontal position half way between the dorsal and left lateral decubitus, supporting the child with one arm beneath the left shoulder, and the other beneath the pelvis. The operator then percusses the organ from below. A larger area of the spleen is said to be available for percussion in this position than in any other, and the organ falling by gravity to the posterior costo-abdominal parietes, is thus carried away from the stomach; this being particularly advantageous, as the infant stomach is so frequently distended with gas that it is apt to mask the percussion-note of an enlarged spleen.

Thoracic Compression as a Means of Diagnosis.—The presence of pain, even though slight or referred to some point other than the chest, is utilized by G. MORENO DE LA TORRE (Rev. Med. Cubana, Dec. 1, 1902) in the diagnosis of pneumonia, in which the physical signs and general symptoms are obscure; as in chronic pulmonary affections such as emphysema, in women with very large breasts, in children and old people, etc. By compressing one side of the chest with both hands, so that the lung is immobilized, the pain will subside or greatly decrease if due to inflammation in the lung so immobilized. If the opposite lung be responsible for the pain, it will continue, though its character may be modified or locality changed. Thus by alternate compression of both sides it may be determined which lung is inflamed. Similarly, if the pain be referred to the abdomen, its cessation on compression of the chest points to thoracic inflammation; its continuance or increased severity, to abdominal trouble.

The Malignancy of Joint Tuberculosis.—That the so-called healed tuberculosis bone lesion is a constant menace to its possessor is the conclusion arrived at by C. F. PAINTER (Bost. Med. and Surg. Jour., Jan. 8, 1902) from a study of 47 cases of recurrent illness. The average duration of quiescence in 45 cases was 12½ years. The average age at time of exacerbation was twenty-eight years. The recurrence of the tuberculous process is most commonly a local one; metastases are rare. Trauma, direct or indirect, is frequently associated with the recurrence. Indirect trauma is probably the exciting cause of most recurrences, especially where partial anchylosis or deformity exists. Patients who have suffered from bone and joint tuberculosis should be cautioned that they are not well when symptoms have ceased, and that reasonable care must be exercised if it is desired to avoid a recurrence of the disease. The chance of recrudescence is lessened by correcting the deformity as far as possible. In the acute cases, in childhood, mechanical fixation should be used. Exploratory interference, however, with a view to removing isolated foci, is advisable in many cases in children, and in a majority of recrudescences, if seen early, exploration may be wisely urged. It is important to recognize the fact that patients with hip disease, Pott's disease and tumor albus have tuberculosis and should be treated accordingly. Painter classifies tuberculous tumors of the joints as malignant, not on morphological grounds, but because of their tendency to recur after removal. In his series of cases 38 recurrences were at the seat of the old disease only. Five were local and metastatic and only four were purely metastatic.

Congenital Dislocation of the Small Intestine.—A female infant, eleven months old, was brought to J. N. HALL (Arch. of Ped., Jan., 1903) with an enormously distended abdomen, but with no other signs of rickets, syphilis or other disease, and no enlarged lymph nodes. The child was breast-fed, took its food well, and weighed over eleven pounds. No normal spontaneous stool had ever occurred, but with laxatives, enemas, electric stimulation of the bowels, etc., the child passed quite normal feces every one or two days. The abdomen slowly enlarged, until great distress followed if a day passed without stool. The temperature was 100° F., pulse 120, tongue clean, and the abdomen enormously distended; and the child died the day after it was brought to the author. A post-mortem limited to the abdomen revealed a normal colon, and all the other organs normal except a slight enlargement of the mesenteric lymph nodes and the enormous small intestine. The first two inches were about two-fifths of an inch in diameter, about normal, but it then dilated quite suddenly to a diameter of 1¼ inches, the dilatation extending to two inches from the cecum. The contents were apparently normal yellowish semi-liquid feces. The author believes that death resulted from auto-intoxication. An interesting fact was that an uncle had been similarly affected in early childhood, but had slowly improved. His bowels now need constant attention to avoid complete obstipation.

Mouth Washes.—As poor digestion and other troubles may result from insufficient care of the teeth and mouth, W. H. TRICK (Dublin Jour. of Med. Sci., Dec., 1902) enumerates the essentials of a good mouthwash. It must be non-poisonous, non-irritating, deodorizing, antiseptic and refreshing. It must also be neutral in reaction, alkalies attacking the organic constituents of the teeth, and acids disintegrating the mineral constituents. It is, of course, not necessary to destroy all the micro-organisms of the mouth, a result that could be gained only by very powerful substances, but fermentation and decomposition should be arrested. Of substances which have been found to be injurious to the teeth, are weak solutions of corrosive sublimate, cream of tartar, salicylic acid, alum, boric acid, thymol and carbolic acid.

Inoculation for Typhoid Fever.—Human blood serum can agglutinate and kill a certain number of typhoid bacilli, but, after having destroyed its full complement, it is harmless to other typhoid germs. The "Berne serum," which was put on the market for the treatment of typhoid, increased the agglutinating power of the blood but destroyed its bactericidal power, and so was worse than useless. Typhoid bacilli in the blood are caught in the meshes of the spleen, and being bathed in blood serum are soon killed, but there are limited areas of the spleen where the bactericidal substances of the serum seem to have already been destroyed, and here the bacteria multiply, the spleen becoming enlarged and congested. Blood from such a typhoid area of the spleen is incapable of harming the typhoid germ, while that from a finger of the same patient is still bactericidal, this indicating a prompt destruction of the antibacterial body in the neighborhood of the splenic typhoid colonies. Now, by the toxin formation of the typhoid colonies, the normal anti-bacterial power of the blood is lowered and some living bacteria may travel through the blood to other parts and form colonies as in the rose spots or the miliary colonies found in the small intestine. Soon, however, the stimulation of the toxins results in an increase considerably above normal of the bactericidal and agglutinating substances of the blood, as demonstrated by the appearance of the Widal reaction when the disease is well established. The prognosis then depends on the ability of these substances to overcome the toxins and bacteria. If, now, the response of the body is just insufficient, a little aid in the shape of a stimulating "anti" serum may turn the balance in favor of the body as against the germ. With the British Army in South Africa, Lieut. W. C. STEVENSON (Dublin Jour. of Med. Sci., Dec., 1902) employed a broth culture sterilized at 60° C. It was found that a dose of one c.c. was followed by a lessening of the body-resistance, and that it took two or three weeks before the body showed increased bactericidal power. This long non-resistant period was too dangerous, so very small initial doses were given, and resulted in an increased bactericidal power in a single day. If, now, after ten days a larger dose is administered, a still greater bactericidal power is gained. The symptoms from inoculation are trivial, rarely resulting in more than a stiffness of the muscles near the site of the injection. In the army the percentage of typhoid cases among those so treated was very considerably less than among those not treated, but all were equally exposed, though inoculation does not absolutely prevent the disease. It must never be forgotten that too large an initial dose is followed by a short period of lowered resistance and would be dangerous in the presence of an epidemic.

Washing of the Stomach.—Those who have had opportunity to wash out the stomach very frequently, have often been dissatisfied with the amount of return fluid which, ordinarily, cannot be increased, however hard one may try to do so. C. MECK (C'blatt f. Chir., Dec. 27, 1902) has hit upon the following simple plan, the efficacy of which he has tested a great number of times in the cadaver and living subject alike. After the fluid is run into the stomach, and the operator is ready to lower the funnel, instead of maintaining the patient in the horizontal position, he elevates the hips high, in this manner bringing the fluid toward the esophageal end of the stomach, and therefore toward the mouth of the tube as it lies in the organ. This maneuver he has found to empty the stomach entirely in the cadaver, even when repeated efforts in the horizontal position have failed to remove any more of the fluid. Similarly, in the living, he has frequently observed that when the return stops in the horizontal position, it will be resumed so soon as the hips are sufficiently high. The maneuver is easy of accomplishment, and not especially difficult for the patient.

NEUROLOGY AND PSYCHIATRY.

Tabetic Joint Diseases.—The study of neuropathic joint affections was grounded by Charcot in 1868, since which time the French have done the greater part of the work in these investigations. K. WILDE (Deut. Zeitsch. f. Chir., Oct., 1902) in an exhaustive article relates the ancient as well as the most modern views of the etiology of this interesting and not uncommon affliction. Charcot's view, as is well known, was that the tabetic joint is the result of degeneration of the trophic centers in the anterior cornu of the spinal cord. Later on, however, this view was shown to be groundless by microscopic investigations so that Charcot himself retracted it. In a somewhat modified form it has very recently been brought back to life by Gilbert who assumes a trophic center in the spinal cord which has control of bone building. Charcot later altered his opinion, concluding that the condition was dependent upon tropho-neurotic changes in the terminal nerve elements of the bone. Although to this day the evidence of such terminals has not been shown, the great probability of the truth of his theory still holds good. Buzzard's belief that there was a center for joints in the medulla oblongata was used by him to explain the frequent occurrence of gastric crisis, because of the proximity of the two centers, has only historic interest. Volkmann believed formerly that tabetic arthropathy held some very distinct relation to arthritis deformans and tried to explain the condition on a purely mechanical basis. This view is shown to be fallacious because the greater part of tabetics do not suffer from broken down joints. Virchow, Rotter and others hold that the affection is similar to an arthritis deformans, which assumes a peculiarly rapid and destructive course because of the injury to the nerves. Clinically, however, both these sicknesses, as has frequently been shown, are utterly different from each other. To be sure the hypertrophic form of tabetic joints may resemble the joint of arthritis deformans, particularly in the mono-articular form, but the bone changes, if carefully stdied, present conclusive differences. The atrophic form shows itself by the fulminating speed of bone destruction and by the rapid establishment of flail-joints. In arthritis deformans, on the other hand, the atrophy is never of this advanced character and the destruction is always accompanied by osteophytic action. In this way, by careful observation, we can easily distinguish tabetic joints both pathologically and clinically from arthritis deformans. Strümpell's view that the bulk of arthropetic joints are of syphilitic origin is also untenable. We see in the course of other spinal cord diseases, for instance syringomyelia injuries, and so on, almost identical joint lesions as in tabes, where lues can be positively excluded. In many of the author's cases even congenital syphilis could be positively excluded. He is forced to the conclusion that some other factor or factors than those considered were instrumental in creating the diseased joints which he reported. A very careful investigation into the history of all these cases revealed the fact that every one if questioned closely could not deny injury of greater or less moment in the very early stages of the trouble. He would therefore speak of traumatic tabes. It seems to him worthy of note that if a patient in the very earliest and usually unrecognized stages of tabes suffers either from a sprain or a subluxation or a dislocation or a joint fracture, it is reasonable to assume that the groundwork for the characteristic destruction of the joint was already present in the constitutional disease and all that is necessary is a slight traumatism just as we often find in children of a tuberculous diathesis that an insignificant fall or a slight twist will be the starting point for typical tuberculous infection. There are thousands of tabetics who year in and year out carry on their accustomed work without suffering any inconvenience save from their incoordination. Let one of them, however, receive ever so slight an injury in his weakened joint anatomy and the characteristic Charcot joint receives the very impetus which allows it to develop.

Observations on Cerebral Localization.—In matters pertaining to the morphology and function of the head, the Italians are at least as active as any other nation. FRANCESCO DURANTE, Director of the Surgical Clinic, University of Rome (Brit. Med. Jour., Dec. 13, 1902), contributed some interesting observations bearing more particularly on the importance of the frontal lobes as the seat of the higher functions of mind. He believes that the surgeon can contribute more successfully than the physiologist, because the latter is obliged to draw his conclusions from the dissimilar brains of animals, while the former is frequently given an opportunity to operate upon the human brain. He rehearses the history of eight cranial resections, six for dural and cerebral neoplasms and two for remote and post-traumatic conditions with eight cures, of which five are complete and three with defect. Of these eight cases one died from recurrence after the second operation. His conclusions were as follows: (1) That lesions, especially those determined by neoplasms of the frontal lobes, are nearly always accompanied by a very grave phenomena of altered intelligence, which proves that the frontal lobes and particularly the prefrontal, must be considered as the seat of the most elevated functions of the mind; (2) that the cortical center for hearing is situated in the temporal lobe, that each center is in relation with both the auditory nerves, and that the direct auditory bundle must be very much less active and smaller than the crossed auditory bundle; (3) that the site of the center for general sensibility and for muscular sense is in the parietal lobes and that disturbances of general sensibility and of muscular sense may occur in the limbs independently of any disturbance of motility whatsoever; (4) that for the solution of various problems concerning the functions of the several regions of the human brain, operative surgery and pathological anatomy are more useful than experimental physiology, which has animals only at its disposal; the functional arrangements of the brains of such animals has some analogy to that of man but certainly cannot be compared with it in every respect.

Massage of the Neck for Insomnia.—All direct and side-lights upon that most vexatious of single symptoms, insomnia, are certainly very welcome, and the application of the following very simple methods may, in selected cases, be worthy of trial. A. G. NEUMANN (La Sem. Méd., Dec. 17, 1902) has been having success by massage of the neck for various degrees of insomnia. The patient lies down upon his back, with the head slightly supported in the forward position. The masseur sits at his side and carried out light, rapid motions, especially along the region of the muscles of the neck. In passing from above downward, beginning, for example, at the ear, he passes down to the root of the neck, to the so-called jugular fossa. At first it is necessary to continue the massage for one-half hour, gradually, as a rule decreasing the time to 15 or 12 minutes or a little less. This method of treatment appears to be most efficacious against those forms of insomnia which were due to hyperemia of the brain, for example, in neurasthenia, alcoholism, nephritis and other conditions among consumptives. He has similarly succeeded with anemia and chlorosis. He goes so far as to state that he has found this method successful when narcotics, even of the more powerful type, utterly failed.

Serotherapy in Mental Diseases.—In discussing the employment of serotherapy as applied to mental affections TAMBRONI (Rev. di Freniatria, Vol. XXVIII, fasc. 1) draws the following conclusions: Specific serotherapy is so far only a desideratum in psychiatry. Physiological serotherapy is easily applicable in the insane and requires the simplest technic. It is to be employed in cases in which the mental affection can be ascribed to either infection or auto-intoxication; but still so far it is impossible to state with any degree of certainty that physiological serotherapy exerts any useful, constant or direct effect on the mental condition present. It may, however, like many other equally useful therapeutic agents, be of marked benefit to the gastro-intestinal tract, or the general physical state of such insane as suffer from dementia, epilepsy, pellagrosis, etc.

Anatomical and Histological Changes of the Nervous System in Parkinson's Disease.—The communication which was presented by BURZIO (Ann. di Freniatria, Vol. XII, fasc. 2) before the Italian Freniatric Society, is based on two cases, both of which came eventually to the anatomical table after a slow progressive marasmus. The first case showed atrophy and extreme fragility of the cranial bones, vertebræ and ribs. The dura was thickened and adherent to the cranium; the brain was markedly congested. The spinal cord showed advanced atrophy of the posterior columns, especially in the whole length of Burdach's column. Histologically there was atrophy at times passing into sclerosis, accompanied by the almost complete disappearance of the sheaths. Certain special preparations brought out abnormal pigmentation of the cells of the anterior horns, the presence of very numerous amyloid bodies and occlusion of the central canal. The second case showed a slight diffuse leptomeningitis with a certain degree of cerebral edema, the arachnoid full of irregular hard parchment-like plaques corresponding to the posterior dorsal region. There was observed in the intervertebral ganglia an hypertrophy of the interstitial tissue with an increase in the number of the nuclei and atrophy of the cells. The cortex of the frontal and parietal convolutions showed atrophy and refraction of the medullated fibers. Although the communication is but preliminary to a larger one promised by the author at some future time it goes far to substantiate the author's contention as to the existence of an anatomical basis for Parkinson's disease.

Frequency of Kernig's Sign.—Inability to passively extend the knee fully, while the thigh is at right angles to the body was present in over 60 per cent. of all hospital patients examined by R. D. RUDOLF (Am. Med., Nov. 8, 1902). Kernig's method is to place the patient in a sitting posture and then extend the knee. A more convenient way of applying the same test is that mentioned by Osler, in which the patient is kept recumbent and the thigh is placed at right angles to the body and then the knee is extended. A procedure having advantages over both these methods is first to extend the knee fully, then flex the thigh on the pelvis and measure the angle at the hip. Thus only one angle requires to be gauged instead of two and hyperextension of the hip, showing muscular hypotonus, can be measured. There is a great proneness in meningitis to increased muscular tonus, which is most apparent in the muscles of the neck and in the hamstrings. This hypertonus is probably due to cerebellar irritation, and, conversely, cerebellar irritation is probably the explanation of Kernig's sign in meningitis. Inability to extend the knee fully with the hip at right angles to the body, or to flex the hip to a right angle while the knee is extended, occurs in many conditions besides meningitis. They are cerebellar diseases and diseases of the upper neurons of the motor tracts, acute eye troubles, disuse of the lower limbs for some days, as in recumbency, local conditions in these limbs as sciatica, arthritis and contractures, old age, etc. When Kernig's sign is well developed in a recently healthy individual who has fever and none of the conditions mentioned, then it is a valuable sign of meningitis, and this is probably, at least partially, in the cerebellar region. For the purposes of greater clinical accuracy, it is urged that writers upon this condition, express the angle at the knee or hip in degrees, rather than merely mentioning the presence or absence of the sign.

Collapse in Acute Infectious Diseases.—Circulatory disturbances occurring in patients suffering from some febrile disorder, have always been attributed to heart failure, as a result of the infection. The article of D. PASSLER and D. ROLLY (Münch. med. Woch., Oct. 21, 1902) however, throws new light upon this subject. Numerous experiments on animals with various toxins show that the collapse is really due to a paralysis of the vasomotor system. The heart itself does not contribute to the fall of blood-pressure and may even compensate for this by increased work. The poison of diphtheria alone directly influences the heart, which corresponds with the fatty degeneration found postmortem, while this materially diminishes the powers of resistance of the heart, the prime cause of circulatory failure, even in diphtheria, is vasomotor paralysis.

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PRACTICAL ASPECTS OF ARTERIOSCLEROSIS.

THE symposium on arteriosclerosis at the recent meeting of the Medical Society of the State of New York, for an account of which see the society proceedings in this issue of the MEDICAL NEWS, page 274, brought out a number of very practical points with regard to this important affection. While atheroma, the localized degeneration of arteries, has been recognized for centuries, its clinical significance has come to be realized only in comparatively recent years. It is scarcely more than a single generation of medical men since Gull and Sutton called attention to the generalized sclerotic condition, liable to affect even small arteries or capillaries, and producing the so-called arteriocapillary fibrosis. The clinical position of the affection has gradually become more prominent until now it furnishes material for a long symposium, every detail of which was of practical rather than theoretical interest.

While arterial degeneration may be considered almost normal in old age, and to some slight degree at least, is usually present in every individual after forty-five years of age, it is by no means confined to the second half of life. A number of recently reported cases involve even quite young persons. Localized degeneration of arteries, usually in the abdomen, has been found in young children. In hereditary syphilis, there are often manifestations due to arterial degeneration that affect adolescents between the years of fifteen and twenty-five. Dr. DeLancey Rochester reported three cases between the ages of twenty-nine and thirty-two. In such cases heredity is usually a prominent factor, and it would seem that so far as long life and short life are family traits, their basis is to be found in a hereditary condition of arteries that makes them naturally more or less vitally resistant to disease and to the wear and tear of existence.

There is no doubt now that arterial degeneration may affect one part of the body without there necessarily being any change in the vascular system of other parts. The mere negative examination of the radial artery, is not enough to exclude the presence of arterial change all over the body. On the other hand a radial artery with what Dr. Glentworth Butler so picturesquely describes as the characteristic goose-neck feel, hard, elongated, and tortuous, does not necessarily imply an immediate unfavorable prognosis, unless there is reason to think that the arteries of important internal organs, and especially of the central nervous system, are similarly affected. The premature degeneration of a single artery, as for instance the Sylvian, may be the only manifestation of arteriosclerosis. This not infrequently leads to apoplexy under fifty and has been recognized as a family trait in some families, the successive generations of which, are taken off by a stroke toward the end or just after the completion of the fifth decade of life. Professor Curschmann's rule then to examine all the palpable arteries and not to confine the examination to one side of the body is a good one, and must constantly be borne in mind. At times the vascular system on one side may be much more effective than on the other, as any one who has the custom of examining both radial arteries will readily remember.

The most prominent feature of the discussion at Albany was the practically unanimous agreement that in elderly persons so-called gastric colic, or gastralgia, is often not really a genuine gastric disturbance, but is a disguised form of angina pectoris. These pains occur not infrequently shortly after the ingestion of food, and especially unsuitable food. The heart action is usually assumed to be disturbed, by the gastric irritation, by consequent reflexes along the vagus, and by mechanical interference from dilatation of the stomach. There are very few practising physicians of considerable experience, however, who have not had unexpected cases of sudden death in such patients. Until Boards of Health refused to accept the phrase, the favorite entry in the death certificate, as the direct cause of death in these cases was "heart failure." The scientific theory advanced to account for it was that intense irritative reflexes, flowed over from the gastric filaments of the vagus into the inhibitory fibers of this important nerve and stopped the heart's action. The day of the reflex may not have entirely passed, but it is surely passing, and the newer explanation offered of the fatal termination in these cases that the affection is primarily a heart condition due to degenerative changes in the heart itself and its arteries is much more satisfactory.

For the diagnosis of arteriosclerosis of peripheral arteries the excellent device of obliterating the pulse by a finger just above while another finger rolls the artery, remains the most trustworthy. An excellent bit of accessory diagnostic technic, however, is to place the forefinger lengthwise over an artery and then by gentle pressure note its inequalities and the way in which the pulse wave travels in it. There is a characteristic inequality of the wave in thickened arteries, due to the fact that sclerotic changes in arteries are not uniform, but are irregularly distributed.

With regard to the treatment of arteriosclerosis the most important element is to secure absence of care and worry, and the avoidance of all excesses not only in eating and drinking, but also in work. Outdoor air, in an equable climate, and a quiet existence are the only things that favor prolongation of life once distinct evidences of arteriosclerosis are noticed. The physician must insist on this if he would consult the best interests of his patients.

THE IMPORTANCE OF BLOOD-PRESSURE.

HAVING at last a theory of collapse and shock which is satisfactory to physiology (thanks to Dr. G. W. Crile of Cleveland), it may be well to have recalled to mind the importance of attention to blood-pressure, now proven to be the basis of both these alarming conditions. Dr. Harvey Cushing of Baltimore did this exceedingly well for the profession last week at the Boston Medical Library. The surgical physiologists have been accomplishing so much of late (with the aid of animal experimentation), that physicians are apt to notice much less than it deserves this far-reaching suggestion introducing into the clinical routine a new procedure and adapting for its use a valuable instrument of precision itself only three or four years old. We refer to the regular observation and recording of blood-pressure as readily obtainable with the modified Riva-Rocci sphygmomanometer. This instrument consists of a flat rubber bag about four centimeters wide and long enough to encircle the arm; this bag is enclosed in a canvas covering bearing longitudinally a row of hooks by which it may be adapted and fastened to any arm, small or large. This is connected by a small but heavy rubber tubing with a straight mercury manometer, often made, for greater portability, in two parts, and to this is connected an ordinary double bulb such as is used with the cautery. If now the armlet be fastened snugly upon the arm above the elbow and the pressure be gradually raised by repeated compression of the bulb, the elastic bag will evenly constrict the arm and its contained brachial artery, the manometer recording the pressure. If with the fingers of the right hand we now feel the radial pulse while with the other hand we compress the bulb, as the pressure rises we will note the instant when the pulse is lost; then lowering the pressure the pulse suddenly returns and the pressure at which it does so is the systolic blood-pressure. This instrument may be left on the arm indefinitely without inconvenience and is almost instantly ready for an observation.

Dr Cushing has emphasized in convincing terms the strong need of having continuous record of the blood-pressure such as is now made universally of the temperature, pulse-rate, and the rest. To the physiologist indeed the blood-pressure seems the most practically important of these all, possibly excepting temperature; it is certainly of much greater moment in most cases than is the pulse-rate, for these reasons if for no other. The heart is by its nature a most powerful and persistent organ and eminently automatic. It is adapted to very great variation in the speed at which it works in order to adjust it to widely varying systemic conditions, a fact explained by the seldom-realized circumstance that this viscus actually rests on an average eighteen hours out of the twenty-four; it has then constantly in store a large supply of latent energy. It is far otherwise with the pressure of the blood as regards the intimacy of its relation to tissue-life; indeed the heart is a mere pump whose sole purpose it is to supply the capillaries with an adequate amount of blood at a pressure necessary for its interchange with the cells of the tissues. The osmosis and filtration of the nutritive elements is largely dependent on the accustomed pressure in the capillaries and in the spaces around them, and to change it, especially to lower it, is to vitally disturb this the most basal of organic functions, nutrition. In collapse this vital blood-pressure is low from any one or more of many possible causes. In shock the blood-pressure is low because, as Crile has shown, the vasomotor center in the medulla oblongata, which normally maintains the blood's pressure by changes in arterial tone, is exhausted and quite incapable of its life-preserving task. Thus collapse is a dangerous condition because a very low blood-pressure prevents the indispensable interchange between the tissues and the capillaries; shock is dangerous for the same reason, but much more dangerous because of the temporary death of a vital center in the brain.

Now these conditions of collapse and shock, as represented by low and ever-falling blood-pressure, are not adequately discernible in practice by the average physician or surgeon with his finger on the radial or carotid, and even the *tactus eruditissimus* of the expert fails to convey scarce more than the mere direction of the change in arterial tension; for nurses or orderlies to keep informed as to blood-pressure without mechanical apparatus of course is out of the question. The conduct of many of the severe infectious fevers and of other conditions in which collapse is to be feared suggests powerfully the benefit which might come from a continuous record of the varying pressure, as, *e.g.*, on a chart like those on which now the temperature and pulse-rate are so regularly recorded. Finally, for the surgeon to have before him as he performs a long and severe operation a plotted curve showing every five minutes the pressure in the arteries, is for him to have early warning indubitable of what often he fears most, the beginning of shock, and therein too the one record which tells him most that is essential of the condition of his patient. With this knowledge the surgeon acquires great advantage over the case and a latitude in operating heretofore unknown, for he has information which is scientifically exact.

Here then in this continued work of Crile, Dawbarn, Cushing, Janeway, Cabot, McCurdy, Hough, and others the profession finds taken a step distinctly in advance toward the precision of the arts of medicine and surgery, one more lessening of the old reproach that medicine as a whole is largely an empirical science, a matter of guesswork more than of measurement. Experimental physiology is changing all that to the lasting benefit of humanity and her brute friends.

PARAFFIN IN SURGERY.

In May, 1899, Gersuny of Vienna first conceived the idea of using this substance. It was in a man who had undergone the removal of both testicles for tuberculous disease and who desired to pass the examination for the army. Gersuny had observed that hard vaseline, melted and injected under the skin remained there unchanged, and he concluded that by using paraffin he could produce in the scrotum the appearance of testicles. This was accomplished in so practical a manner that the man passed the physical examination for the army. A year later the lumps of paraffin were unchanged and as hard as cartilage. Some months after, however, the patient had typhoid fever and his temperature rose above the melting point of paraffin, 104° F., when the testicles softened and ran together, but a year later they had regained their normal shape.

Gersuny's next case was one in which operation for cleft palate had been done, but the palate was too short to reach the back of the pharynx and after much difficulty he succeeded in enlarging it by paraffin injection. In 1900 he published his cases with the following suggestions, viz.: that paraffin be used to raise the cheek, after excision of the superior maxilla; to fill a cavity in bone after operation for necrosis; to make good a morphological defect in the brain; to obtain a movable joint after resection; to support the weight of the blood in varicose veins; to cure incontinence of feces or urine; to keep back a hernia that could not be held with a truss; to conceal the flatness of the chest wall after removal of the breast. One of his own cases was that of successful cure of incontinence of urine in a woman who had undergone seven operations for vesico-vaginal fistula, all of them in vain.

Is this method attended by serious danger? Probably not if certain restrictions are cast about its employment. There is no fear of poisoning. There is no risk of suppuration or of sloughing if, first, the solution be sterile, and second, too much be not injected at once. The danger from embolism is not great, considering the number of cases in which it has now been used. In the whole of the literature but three cases are recorded and in at least one of these the mass of paraffin used was vastly in excess of what is now deemed safe. Certainly this danger is not greater than one per cent. in cases where the injection is made in the loose tissue around the vagina or rectum, and practically nil when used beneath a depressed scar or for a deformed nose.

The question of the melting point of the mass is not as yet definitely determined, but Stephen Paget regards a composite paraffin having a melting point between 111° F. and 115° F. as the most satisfactory. Especially in nose work one needs a paraffin that sets rapidly and firmly to withstand the very heavy pressure of the skin. One has to balance between a paraffin that may be a little too soft and one that may be a little too hot. Another problem, which is scarcely second to those already considered, is the shrinkage of the paraffin. The harder it is the more it shrinks.

So far as the technic of the operation goes, asepsis is as important here as anywhere. Two syringes should be prepared in case one gets out of commission. They are kept in a water bath several degrees above the paraffin melting point. A general anesthetic is given. The skin is nitched for the needle and five or six c.cm. of the paraffin taken into the syringe. Then the needle is dipped for a moment into boiling water. It should not be passed through a flame, because this burns the paraffin and stains it. An assistant keeps a very firm pressure about the nose, or part undergoing operation, making his fingers and thumbs meet in a ring. Injection should be at the rate of about one c.cm. in ten seconds. The paraffin begins to set in less than a minute, but it is plastic for a quarter of an hour. The molding should be done very vigorously and the nose must not be left until the paraffin is hard. A cold compress should be put over the face after the patient is put to bed.

As far as general results go, they are excellent. The surgeon must not promise a pure Greek profile to any patient, but he can justly assure them of very great improvement. Stephen Paget has had 26 cases without death or disaster. The noses are not perfect but they are sufficiently elegant to make the people happy, to enable them to get work or get married, and to go about without being suspected of having had syphilis.

THE HERALD ON HEALTH DEPARTMENT APPROPRIATIONS.

IN the editorial columns of the New York *Herald* of January 19, an article remonstrating against the raising of the assessed valuation of real property, expresses fear lest it may lead to municipal extravagance, and mentions as an example of this extravagance, that "the Health Department grows daily more expensive through the new-fangled additions of nurses and eye doctors imposed upon the schools." Whatever the worthiness of the remainder of the criticisms of the city's government, they must be robbed of their influence by the embodiment of such a sentiment. A remark which pronounces any advance made in the city's protection of its citizens, and especially of its children, as too "new-fangled" and extravagant, will not only fail to gain the public's approval, but must bring distrust of any other remarks from that source. It has taken a fight of fifteen years to have means secured for the protection of the pupils of our public schools from that dangerous and most contagious of diseases of the eye: trachoma. Even the exhibition before the legislature, several years ago, of children rendered blind by the ravages of this disease, failed to move that body to action. Last spring the examination of the pupils of only thirty-six schools, showed six thousand to be suffering with trachoma.

What tax-payer, no matter to what political party he owes allegiance, will deride, or deplore as too extravagant, any means taken by our Board of Health to protect our children from such a widespread, contagious and dangerous disease?

ECHOES AND NEWS.

NEW YORK.

The Craig Colony Prize Awarded.—The prize of $200, annually given by Dr. Frederick Peterson for the best original essay on the etiology, pathology, and treatment of epilepsy, was awarded this year to Dr. Julius Donath, of Budapest, Hungary, for his paper on "The Presence of Cholin in Epilepsy and its Significance in the Production of the Convulsive Attack." The award was made by a committee of the New York Neurological Society, consisting of Dr. Pearce Bailey, Dr. C. A. Herter, and Dr. George W. Jacoby, and the essay will be published as soon as possible. Dr. Peterson again offers a prize of like amount for the same purpose and under the same conditions, viz.: (1) That the paper must show original research work; (2) that the subject matter of the essay shall not have been before published; (3) that all manuscripts submitted shall be in English and shall be sent Dr. Peterson, at 4 West Fiftieth street, New York city, before September 30, 1903, the successful manuscript becoming the exclusive property of the Craig Colony; (4) each essay submitted must be accompanied by a sealed envelope containing the name and address of the author and bearing on the outside a motto or device, which is also to be inscribed upon the essay.

Columbia University Lectures.—Eight illustrated lectures on the Physiology of the Nervous System and the Related Parts, will be given by John G. Curtis, M.D., Professor of Physiology in Columbia University, in the great hall of Cooper Union, on Mondays, February 9, 16, 23, and March 2, 9, 16, 23, 30, at 8 P. M. I. How we know that the brain is the seat of feeling, thought and will. II. How the nerves work. III. How the muscles work. IV. How we see. V. How we hear. VI. Taste, smell and touch. VII.

The involuntary workings of the nervous system. VIII. How our bodies keep their balance. The lectures are open to the public. No tickets of admission are required. The doors will be open from 7.15 P. M. to 8 P. M., after which no person will be admitted.

The Charity Organization Society.—Whereas, It has come to the knowledge of the Committee on Tuberculosis of the Charity Organization Society that many so-called specific medicines and special methods of cure for tuberculosis have been and are being exploited and widely advertised, and Whereas, The advertisements of some of these cures have made such reference to the Tuberculosis Committee of the Charity Organization Society, or to some of its members, as to create the inference that this committee, or its members, recommend or advocate the use of many such so-called specifics or special methods of cure for pulmonary tuberculosis, or consumption, and Whereas, There is no specific medicine for this disease known, and the so-called cures and specifics and special methods of treatment widely advertised in the daily papers are in the opinion of the committee without special value, and do not at all justify the extravagant claims made for them, and serve chiefly to enrich the promoters at the expense of the poor and frequently ignorant or credulous consumptives, therefore, Resolved, That a public announcement be made that it is the unanimous opinion of the members of this committee that there exists no specific medicine for the treatment of pulmonary tuberculosis, and that no cure can be expected from any kind of medicine or method except the regularly accepted treatment which relies mainly upon pure air and nourishing food.

General State Statistics for 1902.—According to the annual bulletin of the State Department of Health, issued January 31, 124,160 persons died during the year, making a death rate of 17 per 1,000 of population. The total number is about the average of five preceding years, but was about 5,000 less than the mortality of 1901. The decrease from last year was mostly in the winter months, but the midsummer mortality this year was unusually low. January was the month of the greatest mortality, and November of the least. The infant mortality was very low, almost 5,000 less than the average. Smallpox existed in the early months throughout the Adirondack region, where it has not recurred, save to a limited extent this present winter. During the year the disease has developed in 135 municipalities in all parts of the State. It was most prevalent during the first half of the year. It caused the same mortality as in 1901. There were 8,800 cases of death from pneumonia and about 5,500 from Bright's disease. Grip was estimated to have caused 4,000 cases of death in the early months of the year.

Typhoid Epidemic in Ithaca.—Ithaca is suffering from a pretty severe epidemic of typhoid fever, which shows no signs of abating. For days the City Hospital has been crowded with patients, and to-day, to make room, the nurses turned their apartments over to the patients. So pronounced is the demand for admission to the hospital that the matron admits only the worst cases. The Rev. C. W. Peiser, pastor of the Unitarian Church, has offered to turn his church over to the authorities of the hospital if needed, and it is thought that his offer will be accepted, if sufficient number of nurses can be secured to look after the sick. The Board of Health lays the blame for the epidemic upon the impure city water. An investigation is now being made by Prof. Chamot of Cornell University. The health officers have urged that no one drink city water without boiling it. There are at least two hundred cases in the city at the present time. As yet there have been no cases of death and many of the patients have the fever in a mild form.

PHILADELPHIA.

Typhoid Attains Epidemic Proportions.—During the month of January, 1,303 new cases of typhoid fever developed in this city, 325 during the last week of the month. The deaths for the month were 161. It is estimated that between 3,000 and 4,000 cases are now under treatment.

Philadelphia Free to Accept Phipps Gift.—The Pennsylvania Legislature has repealed the Fow Anti-hospital Law and this city can now accept Henry Phipp's proposed gift of $1,000,000, and erect near the center of population an institute for the study, treatment and prevention of tuberculosis. A part of the staff has been chosen. The number will probably be increased to thirty, each one qualified for laboratory as well as clinical work.

Contagious Diseases Hospital Abandoned.—The organization formed to build a hospital to be known as the McKinley Memorial Hospital for Contagious Diseases has been abandoned, and the ground owned by the Association will be sold. For eight years efforts have been made to erect a building, but there was little support by the people. The assets, over $12,000, will be held until some other similar association is formed.

New State Asylum.—The new institution, known as the Homeopathic Insane Asylum, to be established by the State of Pennsylvania, will be located in Hanover township, Lehigh county. An expenditure of $500,000 is contemplated.

Officers of County Medical Society.—The Philadelphia County Medical Society has elected the following officers for the coming year: President, Dr. F. M. Perkins; Vice-presidents, Drs. J. C. Cooper and W. S. Higbee; Secretary, Dr. W. S. Wray; Assistant Secretary, Dr. Ross H. Skillern; Treasurer, Dr. C. L. Bower.

Philadelphia Medical Club.—The annual election, held January 12, resulted in the choosing of Dr. E. E. Montgomery as President, and Dr. Guy Hinsdale as Secretary of the Society. The membership now approximates 500.

Mouth Infection.—At the County Medical Society, January 28, Dr. D. D. Smith, by invitation, presented a paper on the above subject, speaking from the standpoint of a practical dentist, who is also a physician. Dr. Smith stated that he had been working at his calling for 25 years, and only during the last eight had he grasped the true meaning of mouth infection. He then spoke at length regarding the mouth as a prolific source of contagion. All erupted tooth surface is bacterially infected, and in the adult there are from 20 to 30 square inches of such surface. Pyorrhea alveolaris is never of systemic origin, but always local, due to stagnant accumulations on the teeth. It never occurs where there are no teeth, and is readily amenable to treatment when seen early. Instead of being caused by kidney affections and uremia, it may be a cause of the latter conditions. Diseases usually attributed to faulty mastication or dental caries are very often due to neither. Mastication can be dispensed with in many cases without great loss to the individual, the indifference of the stomach to mastication and insalivation being proved by the normal digestion of the edentulous. Much is said and written about the danger of infection from telephone mouth pieces, expectoration, beards, etc., but rarely is anything said about the mouth and its influence upon the health. Complete recovery from digestive disorders often follows extraction of all the teeth of the patient. Nervous, gastric and renal troubles are caused by foul accumulations on the teeth and susceptibility of the person to smallpox and similar diseases is increased by their emanations.

Proper Method of Cleansing the Teeth.—Dr. Smith said that in 1894 he sought the cause of dental caries and its relation to the deposits on the teeth and the health of the individual. Investigations showed that caries of the teeth was due to the accumulations on them. From this he formulated a method of treatment diametrically opposite to that in use before. Instead of confining his work to the repair of carious teeth he began prophylaxis. This consists in enforcing a radical and frequent cleansing of the teeth, thus providing a change in their environment. The removal of all deposits on the teeth, calcareous, secretions, etc., is the first step. Then the teeth are thoroughly polished by hand methods, a power polisher never being used for this purpose. Orange wood charged with pumice powder gives the best results. This cleansing not only prevents the beginning of caries in children, but aids greatly in the proper alveolar development. In older persons decay of the teeth is retarded. For the past seven years the effects of this systematic polishing of the teeth have been the source of constant delight. The polishing is done at intervals of about one month, or in severe cases much oftener at first.

Results of Systematic Cleansing of the Teeth.—All the people who have had their teeth systematically cleansed by Dr. Smith under the method outlined, show some improvement in general health. The breath is relieved of offensive odor, inflammatory conditions of the throat clear up, and cases of intractable dyspepsia are cured or greatly benefited. Two cases of pyorrhea alveolaris were completely cured. One case of nervous dyspepsia and stomatitis was cured after 18 months' effort. One case of long standing tonsillitis readily yielded after the teeth were kept entirely clean. Germicides will not accomplish this effect, however thoroughly they may be employed. Dentistry alone will yield such notable changes and properly educated dentists is the first step. Dr. Smith arraigned severely the dental profession for their shallow methods of work. They stick too much to the old lines, dealing with caries, making mechanical devices, etc., instead of making advances in their art. The medical profession must always supersede all others in relieving the ailments of the human race, but the dental profession should become a branch of the healing art. This it can do and yet stick to its own sphere—the mouth. Dentistry should be extended to meet these requirements. Specially instituted chairs, both in dental and medical colleges, should teach students the care of the mouth and the interdependence of the two professions in this sphere. Work along these lines will lead ultimately to the dethronement of a most potent cause of infection.

Huntingdon's Chorea.—The hereditary tendency of this disease was well illustrated by the history of a family given by Dr. D. J. McCarthy at the Philadelphia Neurological Society, January 27. The father had chorea and the history of the four sons has been traced. One died of pulmonary tuberculosis. The second is now fifty-two years old, and has had chorea for 14 years, mental symptoms having developed during the last two years. The third son developed Huntingdon's chorea with mental symptoms and finally committed suicide. The fourth son is now developing chorea, having exhibited deficient mentality for some time. Dr. McCarthy also reported the findings in an autopsy upon a man of forty-two years, who had died of Huntingdon's chorea. Changes in the nervous system consisted in a marked wasting of the frontoparietal convolutions, small hemorrhagic foci in the cortex, and perivascular cell accumulations in the frontal regions. Minute cavities were present in the cortex. In the basal ganglia, medulla and cord there was thickening of the intima and adventitia of the vessels and some perivascular sclerosis. The cord showed deficient staining of the lateral columns. There was some evidence of myxomatous degeneration of the choroid.

Multiple Fibromata Confined to the Internal Plantar Nerve.—This case was reported by Drs. W. J. Taylor and W. G. Spiller. The patient was a young woman who first came to Dr. Taylor's notice in 1888. Four years before she had sprained her left ankle, which had since remained weak. Afterward pain and soreness developed on the inner side of the foot, followed by swelling and redness. Later small masses could be felt on the inner side of the sole of the foot, these being hard and excessively tender to pressure. Ten in all could be made out. Operation was performed in 1888, thirteen tumors, varying in size from a hickory nut to a pea, being removed. Their removal gave the patient some comfort, but did not entirely relieve the condition. In 1890 a second operation was performed and two tumors removed. In 1897, six more were taken out. Temporary relief was followed by recurrence of pain and marked sweating of the foot began. In June, 1902, a fourth operation resulted in the finding and removal of five tumors, one of them being attached to the internal plantar nerve by long bands of tissue. The nerve itself was as large as an ordinary lead pencil, and five inches of it was resected. Since that time the patient has been free from pain for the first time in 14 years, and the sweating of the foot has also ceased. Dr. Spiller, who examined the removed tumors, said that histological examination showed them to be fibromata, and not true neuromata, although connected with the nerve. The proliferation probably began in the endoneurium. One of the bands extending between the large tumor and the nerve trunk had in it some nerve fibers. The case was a valuable one, because of the long duration of the process without sarcomatous change, which has been noted in some similar cases.

The Histopathological Changes in the Cerebral Cortex of Epileptics.—By invitation, Drs. L. Pierce Clark and Thomas P. Prout of New York presented a communication on the above subject, the former speaking on the interpretation of the lesions. It was stated that, as it had been demonstrated that epileptic attacks were the immediate sequence of cell changes in the cortex, it was reasonable to suppose that the status epilepticus was the acute manifestation, and that such subjects were most liable to show the changes present in the climax of the disease. Hence every opportunity to study these changes had been seized. In all the cortex of 18 epileptics has been studied, seven of these having died during status. Attempts were made to rule out post-mortem changes by securing the specimens as soon as possible after death, the longest time being seven hours and the shortest one hour. Tissue was hardened in absolute alcohol and a modified Nissl method of staining employed. Sections from a normal brain removed two hours after death were used for purposes of comparison. The cells of the cerebral cortex of epileptics showed the most striking change, this being present in all the cases studied. The cells of the second layer were swollen and the chromatic substance almost gone. The nuclei were swollen, this change being greater than the corresponding change in the cell. The nuclei were granular, often not clearly outlined, and in many instances the nucleoli were abstracted from the cell by the section knife, because they were loosened. This nucleolar abstraction was most marked in the status cases. In one square centimeter of a section from one case, 120 nucleoli were abstracted. The same phenomenon was seen only six times in 32 whole slides from the normal brain. This abstraction points to destructive changes in the cortical cells. It is not to be interpreted as the true pathology of epilepsy, but indicates cell death. The real pathology is yet to be determined, but the writers believe that the first effect of the excitants of epileptic seizures is exerted upon the nuclei of the cortical cells.

Physician Almost Completes Century.—Dr. Henry Helfrich, the oldest resident of Lehigh County, died at his home in Allentown, February 1. He would have been one hundred years old in July of this year. Dr. Helfrich had retired from active practice some years since, but was remarkably vigorous until a few weeks ago, and still prescribed for a number of people who came to his home.

CHICAGO.

New Hospital.—Drs. Nicholas Senn, Fernand Henrotin, and a number of other leading physicians and surgeons of this city contemplate the erection of a new policlinic hospital on Oak street and La Salle avenue. It is said that this hospital will cost approximately $300,000. There will be an attempt made to defeat the ordinance which the surgeons and physicians hope to have passed by the City Council, abolishing the frontage consents at present required before any hospital building may be erected. This measure has already been favorably passed upon by a subcommittee of aldermen, so the fight will be an open one on the floor of the council chamber.

Cocaine Abuses.—Already five druggists, who are alleged to have sold cocaine in violation of the law, have been indicted by the grand jury. Many letters written by wives who pleaded with druggists to refuse cocaine to their husbands have been presented to the grand jury. According to the law, no one can buy cocaine without a prescription from a licensed physician, and under this law the grand jury and State's attorney were acting. The State Board of Pharmacy opposes the sale of cocaine except for its legitimate uses, but when a regularly registered pharmacist fills the prescription of a physician, the law allows them to make no complaint.

Cocaine Habit.—Dr. Sanger Brown, in speaking of the horrors of the cocaine habit, says, among other things, that the use of the drug may begin through an effort to alleviate pain or from other causes, but whatever the beginning, cocaine soon holds the patient in its merciless grasp, and the strongest person is reduced to a wreck. The immediate effect on the patient is a feeling of exaltation and of well-being. Life's troubles are forgotten for the moment, and pain is deadened. But this is only for the moment. The addiction in its early stages has a tendency to lower the moral tone, and there is also a marked physical deterioration. The patient becomes nervous and irritable, and is unable to apply himself efficiently to any line of endeavor. While under the stimulating influence of the drug, he may accomplish a little, but the tendency is strongly downward. Cocaine, unlike some other stimulants, seems to operate more peculiarly on the brain cells. There are other stimulants which have as much or more tendency to quicken the circulation, but they do not seem to produce the same dreamy sense of exhilaration that accompanies the use of cocaine.

Cure of Cocaine Habit.—The cure of the cocaine habit, when a cure is possible, as is the case in most instances, requires the best of medical care in a hospital or sanitarium. The patient must place himself under the complete control of the physician, and in the average case should remain under treatment from four to six weeks. Such treatment, of course, is beyond the reach of all victims of the drug.

Celebrating Anniversary of Founder's Day of the Northwestern University.—The celebration of the fifty-second anniversary of Founder's Day by Northwestern University occurred Jan. 28, at the Auditorium.

Degrees Conferred.—The degree of LL.D. was conferred on Dr. W. W. Keen, of Philadelphia, Professor of Surgery in Jefferson Medical College. Dr. Edward C. Kirk, Dean of the Dental School of the University of Pennsylvania, also had the degree of Doctor of Science conferred on him.

The Place of the Professional School in the Modern American University.—President Hadley, of Yale, delivered an address on this subject. He contrasted the English and German universities, and declared the American university should steer in a middle course, avoiding the extreme practicalism of the German and the extreme idealism of the English institutions. He said there are two conceptions of a university, the German and the English. The German regards it primarily as a group of professional schools. It has its three faculties, devoted to the learned professions of theology, law, and medicine, and a fourth faculty, which until the last century was a sort of college of arts, intended to prepare the pupil for the professional school, but which has now become a faculty of philosophy, intended for the training of teachers and investigators. To an institution which has these four faculties the German gives the name university; to one which does not possess them they deny the right to the name. Opposed to this is the English conception, which takes little or no account of professional training. In the opinion of those who hold the English view, professional schools are mere accidents of university development rather than its essential features. He does not believe that either of these views in its extreme form is correct. He would not deny the title university to an institution which was successfully conducted, either on the old English model or on the old German model, but he believes that in each case it would fall short of the full realization of what a university can be and ought to be. A university of the English type is likely to fall into idealism. Without the infusion of a strong element of professional study into the university life, this danger becomes a serious one.

Speaking of the preliminary course, he stated that it is only for the so-called professions of theology, law and medicine that this course in college is anywhere required as an essential. He believes that this requirement is a mistake, in that it involves an effort to perpetuate a distinction which is contrary to the spirit of American institutions. Its tendency is to shut out boys whose fathers have no money from the practice of these callings. He also believes that it will tend to lower the standard of collegiate degrees, for if we are to require a certain degree of all candidates for law or medicine, we shall be under constant pressure to reduce the requirement for that degree to the minimum, which it is easy to exact of all. Let the preliminary examinations of professional schools be fixed as high as may be necessary, but let us not, in lieu of such real requirements, insist on preliminary residence at a collegiate institution from those who lack either the money or the inclination to profit thereby, and let us in the future, as we have done in the past, construct our collegiate courses to meet the needs of those who want them, instead of reconstructing them to meet the needs of those who do not want them.

GENERAL.

Medical Journal Club of Baltimore.—The Medical Journal Club gave their annual banquet last night at the rooms of the Medical and Chirurgical Faculty, 847 North Eutaw street. Dr. John C. Hemmeter acted as toastmaster. The faculties of the Johns Hopkins, College of Physicians and Surgeons, and of the University of Maryland, were well represented. Drs. Llewelys F. Barker of Chicago, and Simon Flexner of Philadelphia, were among the invited guests. The suggestion made in the new Medical Library and Historical Journal that a national organization with some such title as American Association for the Study of the History of Medicine is being taken up very enthusiastically in Baltimore. The Johns Hopkins Hospital Historical Club, the Medical and Chirurgical Journal Club, and the College of Physicians and Surgeons Medical Society have taken the matter up quite heartily. Such names as Drs. William Osler, William H. Welch, Stewart Paton, Harry Friedenwald, Henry M. Hurd, and John C. Hemmeter are mentioned as in favor of the movement.

Fourteenth International Medical Congress at Madrid.—It is believed that a considerable number of American physicians will attend the fourteenth International Medical Congress, to be held in Madrid, April 23 to 30, 1903. As all those who wish to attend the Congress have a common objective point, it is thought that they can be associated to advantage in one or more excursion parties. In this way the social features of the trip will be enhanced, and each individual will be surrounded by those who are personally congenial. By such association better accommodations can be secured and at a considerable reduction in price. Additional security will also be attained, as parts of the trip which include comparatively unfrequented routes of travel, will be under the charge of a travelling conductor who is thoroughly conversant with the language and customs of the countries visited. As there will doubtless be some divergence as to choice of routes depending on individual inclination and previous opportunities of foreign travel, several returning routes have been selected, the itineraries of which, although separate from a portion of the journey, have been arranged that the principal points are visited together. The party will sail from New York city, on April 11, on the twin-ocean steamer, "Princess Irene," North German Lloyd, direct to Gibraltar. Tickets for the round trip, including hotel and sightseeing, $265, $375 and $550, according to the tour selected. It is important that all who contemplate taking this trip should register at once, so that reservations for hotel in Madrid may be satisfactorily arranged. Final arrangements will be in the hands of the well-known conductors, Thos. Cook & Sons, which insures perfect and complete service in all details. Full information and copies of itinerary may be obtained by addressing either of the last named undersigned, W. W. Keen, Howard A. Kelly, Robt. T. Morris, Walter Wyman, A. Vanderveer, Lucien Howe, Nicholas Senn, Jno. B. Murphy, Chas. H. Hughes, C. A. L. Reed, Joseph Mathews, W. F. Southard. Ramon Guiteras, 75 West Fifty-fifth street, New York City. Chas. Wood Fassett, Krug Park place, St. Joseph, Mo.

CORRESPONDENCE.

FORMALIN SOLUTION.

NEW YORK, January 27.

HON. HOMER FOLKS, Commissioner,

DEAR SIR: The "Formalin" treatment requires more than ordinary caution. It has come to my notice that lately Formalin solutions have been used in the public hospitals under our care for injection, where the strength of the Formalin was absolutely unknown to the physician. As is well known, Formalin is a solution of Formaldehyd in water. Formaldehyd is an oxidation product of methyl—or pure wood alcohol.

According to modern theories, which I have also tried to prove in one of my publications, the efficiency, *i.e.*, the poisonousness of the aldehydes is so great on account of their great reactivity with the amido groups of the protoplasm. Formaldehyd especially is probably the greatest germicide known and kills anthrax bacilli in solutions of 1 to 125,000.

Formaldehyd is supposed to be had in 40 per cent. aqueous solutions, miscible with water in all strengths.

The fact is, however, that Formaldehyd as met with in the market varies all the way from 36 to 25 per cent. It is, therefore, of the utmost importance that the solutions be standardized and diluted to say, 1 to 2,500. In such great dilution Formaldehyd will keep in well-filled small glass-stoppered bottles, while the strong solutions change from day to day.

This department proposes to standardize their solutions in the future and supply only such to the hospitals for subcutaneous injection. It would be well worth while for the hospitals generally to follow this procedure for the sake of their patients.

Would you kindly send a copy of this communication to Dr. W. Mabon.

Very respectfully yours,
W. E. DREYFUS, Ph.D., Chemist.

SOCIETY PROCEEDINGS.

MEDICAL SOCIETY OF THE STATE OF NEW YORK.

Ninety-seventh Annual Meeting, held at Albany, January 27, 28 and 29, 1903.

SECOND DAY—JANUARY 28TH.

(Concluded from Page 234.)

Periduodenal Abscess.—Dr. William S. Bainbridge of New York City read a paper describing a case of periduodenal abscess, secondary to perforative ulcer of the duodenum and discussing other cases of the same kind in the literature. Altogether there have been 22 cases of periduodenal abscess reported. Of these only two were recognized before death. One of these was cured by operation, but the convalescence was very prolonged; another one was recognized, but proved fatal. The curious thing about the condition is that occurring as the consequence of ulcer, there may be obscure symptoms at long intervals and apparently with no connection with one another and then sudden lighting up of serious or fatal symptoms.

Illustrative Case.—Dr. Bainbridge's case occurred in a bachelor whose father died of pyloric cancer. The man had suffered from appendicitis nearly a year before, but the symptoms had subsided at the end of seven days. The first symptom of his present condition seemed to be an acute gastritis which came on immediately after drinking ginger ale. There was pain and tenderness in the right epigastrium and the abdominal muscles were rigid above the umbilicus, especially on the right. The pulse was 84, there was no temperature and he vomited everything for two days. All symptoms disappeared and after six days he insisted on walking to his store and after he came home ate three small oranges at once. Vomiting supervened and continued for 24 hours. For fourteen days he had to be fed entirely by the rectum. Then he was allowed to take food and retained it, but lost weight constantly. He became emaciated and slightly icteric. In the eleventh week he died of exhaustion.

Course of Symptoms.—He had no temperature except twice during the disease, each time there being a preceding chill. Absence of temperature seems to be a characteristic of these cases. At the autopsy, very extensive adhesions were found and the presence of the perforation in the duodenum with periduodenal abscess was easily made out. The absorption of pus from this abscess cavity seemed to prevent the proper process of metabolism.

Differential Diagnosis.—These occur much more frequently in males than in females. The proportion is not as great as stated by Fenwick, 10 to 1, but it is probably about 2 to 1. Of the 26 cases 15 are men, 10 women and once the sex is not stated. The main element in the diagnosis is the position of the pain and the localized tenderness. In this case the patient could not lie on his right side. Sometimes there is a history of previous gastrointestinal disturbance, due to the presence of the duodendal ulcer. Hematemesis, or the passage of blood by the rectum, is not common. The disease may occur at any age. In the recorded cases all ages are represented from twelve to sixty. Differentiation must be made especially from appendicitis and right-sided empyemia. At the autopsy, a chronic parenchymatous nephritis was found. This seems to be a frequent accompaniment of duodenal abscess.

Pseudo-Diverticulum of the Duodenum.—Dr. Lewis S. Pilcher of Brooklyn said that he had had a case of periduodenal abscess which he reported some twelve years ago, but which got into the literature as a duodenal pseudo-diverticulum. The patient was a young man who came complaining of pain in the right epigastric region with tenderness and who presented some evidence of a tumor in this region of the abdomen. At operation an inflammatory tumor was found situated behind the peritoneum in which pus and undigested food were present. Three days later peritonitis set in and death occurred. The autopsy showed a defect in the bowel on its posterior surface, about 1½ inches in diameter. The abscess which resulted had been in existence for many weeks and yet had given absolutely no symptoms. It was only on its approach to the surface that symptoms occurred. The latency of so serious a condition for so long a time is extremely interesting.

Subphrenic Abscess.—Dr. Henry L. Elsner said that the periduodenal abscess is really one form of subphrenic abscess. It is not so rare as might seem from the infrequency of cases in the literature. It is curious how often it occurs in combination with parenchymatous nephritis, as in Dr. Bainbridge's case. Dr. Elsner says that he has seen a number of cases of the disease, some of them only as far as the ulcer stage. The diagnosis is not difficult, but the previous history of occasional attacks of gastrointestinal irritation can be obtained and the occurrence of blood in the stools. The interval between blood in the stools and the serious symptoms from perforation of the duodenum may be very long. A well-known physician of central New York, who was taken suddenly ill at the Thousand Islands, with symptoms of perforation, had suffered from hemorrhages of the bowel four years before.

Dr. Bainbridge in closing the discussion said that abscess is not near so frequent as ulcer. It is probably more frequent, however, than might be judged from the literature. The diagnosis is usually missed. With care this need not occur quite so frequently. Ulcers of the duodenum are apt to run a very latent course and are by no means always associated with hemorrhage. Vomiting does not often occur in these cases, so that there is very little to call attention to the serious condition present.

Functional Sexual Disorders in the Male.—Dr. Frederick S. Sturgis of New York read a paper on the treatment for functional disorders of the sexual organs in the male. These are often set down to masturbation in early years. It has come to be almost an article of faith with most physicians that masturbation has such an effect. As a matter of fact, it is a minor causative agent. Another factor is supposed to be withdrawal during coitus. If seminal emission takes place, this practice, however, does not seem to be necessarily so harmful as has been stated. If there is no reflex satisfaction to the intense nervous state, then there are sure to be sympathetic nuerotic disturbances. The most important factor in the production of functional sexual disorders is undoubtedly devotion to woman not wisely but too well.

Psychic Disturbances.—Psychic disturbances of various kinds are set down as causative of sexual disorders of a functional character. Usually, however, there is some basis in the physical condition of the sexual organs, for the development of the neurosis as well as of the mental state. Among the Germans it is said that about 95 per cent. of the men have suffered from gonorrhea. This is too high a proportion, but certainly more than 50 per cent. have had the disease and it had left some organic change behind it. Gonorrhea is not the simple local disease that it used to be considered, and is at least as bad in its effect as its congener, syphilis.

Treatment of Functional Disorders.—Dr. Sturgis said that all of these functional sexual disorders are called debility and are set down to some weakness of the organism. Hence stimulants are always employed. One enterprising firm has insisted that damiana was used by King Solomon. Phosphorus and strychnine in its various forms, and other stimulants are employed. This is like spurring a tired horse. If internal medication can do any good for these cases it must be in the form of sedatives instead of stimulants. Great harm is undoubtedly done, and has been done, by the use of stimulants in these cases. The benefit derived from them is only illusory and they really cause the condition to become chronic.

Accessory Local Treatment.—Treatment should not to be limited to internal medication. In fact this should be only an adjunct to the local treatment. Local remedies accomplish real good. Hot and cold sounds are the best thing for the purpose. Cold usually proving of more avail than heat. Dilute solutions of nitrate of silver irritate for the moment, but eventually prove sedative by lessening the hyperemia of the mucous membrane of the urethra. For sterility little can be done. If it is due to epididymitis there is no cure in spite of all the operations that have been devised for this purpose. Electricity in Dr. Sturgis' hands has proved a disappointment. Some slight good has been derived from galvanism and weak currents frequently applied. Faradism has not only done no good, but sometimes seems to do harm. The use of stimulating drinks must be forbidden. This includes not only liquors, but especially coffee. It seems to have a bad effect on the sexual powers. It is well known that the chronic toper is a poor bed fellow. Meantime, of course, the number of quack remedies for these conditions will not decrease. In the words of the Latin poet, the people want to be deceived and they will be deceived.

Sexual Debility and Operative Measures.—Dr. Dawbarn of New York said that two operations seem to be of some benefit in the treatment of sexual debility. Moses, the great Law-giver, was greater in nothing than in his requirement of circumcision for all male children. Dr. Dawbarn did not hesitate to say that at the present time no better means for the relief of many sexual ills could be obtained than by circumcision. Many adults after circumcision come back to say that their sexual powers have been improved. At times lack of sexual potency is really due to a dilatation or varicosity of the veins of the penis. Some of these may be tied off. The surgeon must be careful, however, not to include the accompanying nerve or there may be unfortunate and undesirable sequelæ. One patient of Dr. Dawbarn's came back to say that he had vigorous erections but that there was a sense of numbness.

Operations Upon the Vas.—Dr. Dawbarn said that operations upon the vas and epididymitis are not so hopeless as Dr. Sturgis would imply. The distinguished New York surgeon in performing an operation for hernia some years ago found that he had cut the vas. He introduced a small strand of catgut into the cut end bringing the portions together over this. This acted as a mandril and he was enabled to suture the vas. In this case patency of the canal seems to have been secured for several years afterward, the patient had still a perfectly normal testicle on that side.

Circumcision as a Suggestive Factor.—Dr. Abraham Jacobi of New York said that circumcision in itself did no good for these neurotic sexual conditions, but the suggestive element of having something done reacted to lessen the patient's nervousness and so relieved his symptoms. A cure may be effected by suggestion, and the best thing to do as a rule, is to keep patients from worrying over their condition. Masturbation is undoubtedly a very frequent cause of impotence. It does not in itself weaken the generative organs, but it leads to frequent nocturnal emissions and this proves more serious for the patient's sexual health than the previous masturbation. There is of course a large psychic element in these cases. Newly married men come sometimes almost in despair to complain that they have been unable to accomplish their marital obligations. They must be told that this is not so very unusual and that it will pass off and if they once succeed they remain cured.

Circumcision and Impotence.—Dr. Sturgis said that in itself circumcision was not at all curative of functional sexual disorders. They occur not infrequently among those circumcised from their earliest years. If there is a long, dirty, or adherent prepuce this should be removed and it will assist in the cure of the condition. It has been the custom too much to set down certain functional sexual disorders to psychic disturbances. It must not be forgotten that there is always a physical basis. Sexual disorders are due rather to too frequent copulation than to masturbation. Act for act, masturbation is no worse for the sexual system than copulation.

Plasmodiophoræ Brassicæ.—Dr. Harvey Gaylord of Buffalo read an article on this parasite which occurs in trees and causes tumors upon them. The interesting feature of the disease is that the parasite finds its way into a cell and stays there until it has exhausted the vitality of the cell. It causes proliferation of the cells but the parasites exist in each cell. It is a true form of symbiosis. Curiously enough too, while the parasite may be inoculated from turnip to turnip, it can not be inoculated from turnip to cabbage. These features help us to understand better the proliferation of cancer cells.

Special Peculiarities.—The organism in the ground occurs in quite a different form to that which it assumes in the plant. As seen ordinarily it looks not unlike a cell, and at times is actually incapable of distinction from small cells. It blackens with osmic acid, as if it were fat and there is a distinct ameboid stage. In this it resembles certain appearances that have been noted in vaccine and variolous material. The parasite evidently belongs to the class of beings known as protozoa. This is also an interesting feature, for the cancer parasite has long been considered to be a member of this family. This parasite must have an intermediate host. It is probable that the intermediate host of the cancer parasite will have to be looked for and found before the true solution of the cancer etiology problem will be solved satisfactorily. How much this complicates the problem may be realized from the fact that certain of the fruit worms have two intermediate hosts. The plasmodiophora brassicæ takes a very special interest then in the light of its possible analogies to the cancer parasite of human beings. The subject is now under study but must be pursued along biological rather than ordinary bacteriological lines and the progress of investigation is necessarily slow.

Primary Carcinoma of the Appendix.—Dr. Arthur W. Elting of Albany reported three cases of this usually considered to be infrequent affection and thinks that the disease is not so rare as has been believed. Early reports of primary carcinomata of the appendix are unauthentic. Out of forty cases found in the literature eight are surely not true primary carcinomata. Dr. Elting's first case was found in a man, aged eighty-one years, with weak heart and pulmonary complications. His death was due to these difficulties of his thoracic organs, though there had been some symptoms of chronic appendicitis for a considerable time with tenderness and some pain in his right iliac fossa. One of the cases was a young man of eighteen in whom acute appendicitis developed followed by an abscess that had been opened, a fistulous tract remaining for many months. The patient lost forty pounds in weight and an operation had to be done. In this case it was found that cancerous degeneration had affected neighboring parts of the intestines very extensively, all of the cecum had to be removed also a considerable portion of the ilium and some inches of the jejunum which had become adherent to the cancerous mass and had become infiltrated with cancer cells. Curiously enough there was very little glandular enlargement and no metastasis, the cancer spreading entirely by continuity. It seems that some of the cases, at least of chronic appendicitis in older people (though from the latter case it is evident that young persons are not exempt), is really due to carcinoma.

Dr. Willis G. MacDonald of Albany, in discussion, said that as these cases of Dr. Elting's had occurred in his surgical service he was deeply interested in them and felt that there was no denying Dr. Elting's conclusion that carcinoma of the appendix is not so rare as has been thought. This association of a surgeon and a pathologist is likely to prove of service in making details of cases clearer to the surgeon and leading to the true significance of disease in many doubtful cases.

Symposium on Arterio-Sclerosis.

Early Symptoms of Arterio-Sclerosis.—Dr. De Lancey Rochester of Buffalo said that at a late stage when the arteries are hard and the left ventricle is enlarged and the blood pressure high it is easy to recognize arterio-sclerosis. At the beginning, however, considerable sclerosis of arteries may be present without the physician's attention being called thereto. It is well to remember that all the peripheral arteries should be examined or some may show signs of sclerosis when others do not. Dr. Rochester gave the details of some cases in which there had been symptoms of arterio-sclerosis masked by severer symptoms in internal organs. The most frequent early symptoms occur in the gastro-intestinal tract. These are due to interference with the blood supply of the mucous membrane and the musculature of the digestive tract. Frequent accompaniments are constipation and indigestion. In these cases, not seldom it will be found that exposure brings on attacks of shortness of breath as the result of reflex disturbance. Dr. Rochester described a case in which asthmatic attacks after exertion constituted the symptoms for which an arterio-sclerotic patient came under treatment. In spite of the asthmatic attacks and during their continuance the second aortic sound was distinctly exaggerated. Renal symptoms in arterio-sclerosis are due to insufficiency of excretion. It is not long under these circumstances before other organs begin to manifest signs of functional derangement because of the presence of toxins in the blood. Under these circumstances particularly, the arteries in the brain are liable to suffer degeneration and apoplexy ensues. It is often said that cardiovascular changes may be recognized by the thickening of the radial artery. When arterio-sclerosis exists the vessel fills slowly, high pressure remains for a perceptible period and then the vessel empties slowly. Sansom's suggestion to place the index finger lengthwise along the radial artery forms an excellent means of determining the mode of filling of the artery and the continuance of blood pressure within it. The other method recommended, that of using two fingers and compressing the artery in its proximal portion and then feeling below the point of compression with the other finger is also an excellent means. If the vessel can be felt beyond the point where the pulse is obliterated, especially if it can be rolled beneath the finger, there is surely thickening of the artery present. For the recognition of these changes in the artery the sphygmograph, or blood-pressure instrument, does not give as much assurance as the trained fingers.

Arterio-Sclerosis and the Heart.—Dr. Glentworth R. Butler of Brooklyn said that there are two groups of heart symptoms that occur as a consequence of arterio-sclerosis. In the one group the coronary arteries are involved, in the other they are not. If the coronaries are intact usually the only change in the heart is a simple cardiac hypertrophy. In the senile form of arterio-sclerosis there is no cardiac hypertrophy. At times the changes in the peripheral arteries are very marked. They become rigid and have the goose-neck feeling. This is the feeble old man type of arterio-sclerosis. When degeneration of arteries occurs in younger individuals, it is either because they are big eaters, or hard workers. Not infrequently the symptoms are the same as those of valvular heart disease. The presence of a systolic murmur will not infrequently lead to a suspicion of mitral insufficiency. Usually early in a case of arterio-sclerosis there occurs interference with the capillary vasomotors that causes leaky skin. Not infrequently the pulse does not correspond to the heart, there being a number of ineffectual systoles. One of the most frequent symptoms of the early stage is a stimulation of gastric attack, really due to the heart. True angina is rather rare and occurs only in advanced cases of arterio-sclerosis when the coronaries are affected or the myocardium is much involved. There may be no thickening of the palpable arteries and yet true stenocardia. If the arteries are not thickened then the blood pressure must constitute the warning sign of the presence of arterial degeneration in the arteries within the body. The pathognomonic sign is the click of the aortic second sound. This is very characteristic. Gastralgia often precedes attacks of true angina. Painful dyspeptic attacks must always be suspected. If the digestive disturbances are marked and have continued for a considerable time, notwithstanding care of the diet a latent heart lesion will be found as the basis of them. There are other localized sclerosis of arteries that are of importance. The Adams-Stokes' syndrome, in which the patient becomes somewhat comatose and the pulse may fall to twenty to forty per minute, seems to find its best explanation in a localized degeneration of the arteries of the medulla. Dr. Butler recently saw a patient in one of these attacks in which for three minutes there was no breathing and no pulse. Then there was a single heart beat. The heart beat rose to four and then to ten and then to twenty-four per minute. Consciousness returned after an hour. There was no hemoplegia.

Arterio-Sclerosis in the Kidney.—Dr. Irving P. Lyon of Buffalo said that arterio-sclerotic degeneration of the heart and the kidney frequently occurred together and it was practically impossible to decide which was primary. Not infrequently the history of the case shows that the presence of some toxin in the circulation is the basis of the affection and that it has probably acted on the heart and kidney as well as on the arteries of the system. The most frequent causes are plumbism, gout, alcohol, syphilis, and hard work. Sex seems to bear an important etiological relation, but this is only because males are much more liable to the causes of arterio-sclerosis just mentioned than are females. In these cases it is extremely important not to use the dread word Bright's disease, because this will scare the patient and make the after-course of the case much less promising. Such cases need to be encouraged and yet at the same time they must be kept from indulging in intoxicant materials or in overwork, and must be made to lead quiet lives.

Arterio-Sclerosis and the Digestive System.—Dr. Charles G. Stockton of Buffalo said that the first symptoms of arterio-sclerosis occur more frequently in the digestive tract than anywhere else. Even ulcers of the stomach may be due to degeneration of the vascular supply of the stomach walls. Virchow pointed out that thrombosis of the vascular system was apt to be followed by digestion of the stomach wall and the resultant peptic ulcer.

Intestinal symptoms in old people particularly are much oftener due than has been thought to degeneration of the arteries. Schroeter of Vienna pointed out not long ago that even meteorism and colic might be due to lack of blood in the intestinal tract. These symptoms are relieved more by the nitrites than by any other form of treatment. Carminatives, instead of doing good, are prone to do harm. These symptoms come on at times when the gastro-intestinal tract has the most function to perform, that is not long after eating. Dr. Stockton said that Ortner reported a case in which a distinct decrease in peristalsis seemed to be due to the disturbance of blood supply consequent upon arterio-sclerosis. This subject is new, however, and the evidence as yet is rather meager. Undoubtedly some obstinate cases of constipation in the old, are due to arterio-sclerotic changes in the arteries of the intestinal wall.

Gastralgia and Heart Pang.—Intense gastralgia is very frequently not a true gastric colic, but is really a manifestation of angina pectoris, or breast pang. The pain is apt to occur just at the pit of the stomach and its connection with the heart may remain utterly unsuspected. Dr. Stockton not long ago had an experience with a case like this in which the pain was relieved for some time and then recurred and the patient expired suddenly on the third day. At the autopsy it was found that the death was due to rupture of the heart wall. Sixty per cent. of the cases of gastro-intestinal symptoms in the old are due to arterio-sclerosis. The majority of those who suffer from arterio-sclerosis have gastro-intestinal symptoms during the course of their disease.

Arterio-Sclerosis and the Nervous System.—Dr. William Browning of Brooklyn read a paper on the connection between degeneration of arteries of the arterio-sclerotic type and various nervous affections and symptoms. Vasodilator drugs often do good for nervous symptoms and it is consequently easy to understand how the disturbance of blood supply consequent upon a thickening of arteries and their failure to be influenced by the sympathetic system would react to produce nervous symptoms. In the brain arterio-sclerotic changes give rise to such important affections as epilepsy, especially that of the Jacksonian type. When there is advanced arterio-sclerosis, patients are apt to suffer with cerebral symptoms during hot weather. Undoubtedly at times when the peripheral arteries in other parts of the body are not affected by the sclerotic changes those of the brain are affected. There may be transient spasm of such affected arteries with vertigo or the limbs may show distinct tendencies to go to sleep. Ocular symptoms are the most important diagnostic aids in these cases. An examination of the ground will often show the visible arteries of the choroid thickened and tortuous.

There is no doubt that trauma of itself favors arterial change. In these cases the reaction after the trauma in such delicate tissues as those of the nervous system leads to the absorption of cellular material in forms that are toxic for the cells lining the arterial walls. Undoubtedly the presence of various toxemias causes degeneration of the arteries of the nervous system. Uric acid for instance may lead to arterio-sclerosis that under some circumstances is especially pronounced in the nervous centers. Arterio-sclerosis associated with nervous symptoms is said to present an especially bad prognosis. This rule is not absolute. When the peripheral arteries are not diseased there may still be sclerotic changes in the arteries of the nervous system. Arcus senilis is sometimes said to make the prognosis bad. The change that produces arcus senilis, however, is not necessarily associated with arterial change and it may exist for many years, without any symptoms of true arterio-sclerosis. When nervous symptoms are associated with arterial degeneration there is necessity for open air life and for a let up in physical and mental activity. Patients should not be advised, however, to give up their usual occupations entirely, since they are apt to worry more and suffer from introspective consciousness of all their ills when they have nothing to do. Open air is the *most* important element in the treatment. After this hydrotherapy, but without any extremes in its application. Where patients indulge in excesses of any kind, either of eating or drinking, these must be given up.

Arterio-Sclerosis of Mental Disease.—Dr. Adolph Meyer of New York said that the brain aged independently of the rest of the system, and that even when arterio-sclerosis exists in other parts of the body, the arteries of the brain may prove to be thoroughly flexible and without degeneration. On the other hand there may be arterial degeneration in the brain, without other arteries being affected. Arterio-sclerosis affects the brain either indirectly or directly. In the first case the brain suffers in its nutrition, the sclerotic condition of the kidneys preventing proper elimination. Sclerosis may occur as a consequence of the spread of the process of degeneration from centrally situated arteries. On the other hand it may be due to lack of nutrition for the arteries themselves, whose resistive vitality is also lowered by the presence of toxins in the circulation. It cannot be said, however, that arterio-sclerosis directly affects the brain in such a way as to cause mental disease. It makes the prognosis worse, but does not necessarily cause special symptoms nor modify types of mental disease. It is after the age of forty-five especially that degeneration of arteries is active. The insanities that occur after this period bear no particular relation to the arterial process. The principal forms are alcoholic insanity, general paralysis, usually due to previous syphilis, mainly in cases that have had a number of attacks before, paranoia, anxious melancholia and forms of hypochondriacal insanity. All of these may occur at early periods of life, or in older persons, without any degeneration of arteries. All of these diseases, unless dementia supervenes, have the same prognosis after forty-five as before, that is as far as the lesser vitality of the individual permits. Insanity in the old is not arterio-sclerotic, but senile in origin. The two processes run together, the degeneration of the nervous centers and of the arteries, but bear no causative relations to one another.

There are cases of insanity that occur, however, with focal lesions. Some of these have foci of softening, with localizing symptoms. At times there are degenerative areas in the centrum ovale. Again, there is a lesion in the anterior limb of the internal capsule. This lesion is apt to cause intermittent laughing and crying, or a continuance of either stage without due reason.

What is mainly needed is the maintenance of safe and simple conditions of life. They must be placed under circumstances in which there shall be no worry. The principal adjuvant to a more favorable prognosis in these cases is to get people out of business and yet furnish them with some occupation of mind and with some necessity for getting into the open air that will maintain their general health and at the same time prove beneficial to their mental hygiene.

Slow Pulse.—Dr. Thomas E. Satterthwaite said that 58 American physicians have been sufficiently interested in cases of slow pulse to report them. The condition is sometimes spoken of as bradycardia or brachycardia. These names are unfortunate, however, since the word cardia indicates, or implies that the key of the trouble is in the heart. This is not true. It must be remembered that there is often a variation of rhythm between the heart beat and the blood vessels, so that while the heart may beat normal in number, the pulse beats may be only one-half as many. True bradycardia means a slow heart, that is, a slow action of the cardiac muscle. In good health the pulse varies in different individuals, but is supposed to be between 70 and 80. Many perfectly normal people, however, have a pulse that is in the sixties. We talk of an infrequent pulse when the number is below sixty. Pulsus infrequens seems the best technical term for the condition.

There is a well-recognized tendency to the occurrence of slow pulse which is normal or physiological under certain conditions. After forty-five years of age, about one in 40 have a pulse that runs below 60. Not infrequently in these cases it will be found that there is no true rhythm between the pulse and the heart beats. Stokes described a case in which the heart beat 36 though the pulse was only 28. There is a congenital slow pulse, usually between 50 and 60 that occurs in families. The slow pulse of pregnancy is well known. Napoleon not only had a slow pulse, normally below 40, but whenever his pulse beat was higher than 40 he was uncomfortable. Vigouroux described a case that was perfectly healthy and not uncomfortable, though the pulse beat was never above 20.

Etiology of Pulsus Infrequens.—Besides the constant slow pulse, there is a paroxysmal slow pulse. This is usually due to the presence of poisons in the circulation. It may occur during any of the infectious fevers. All cumulative poisons cause it. It is well known in blood poisoning, in uremia, in cholesteremia and in other conditions of metabolism that are liable to produce coma. Probably the most frequent cause of slow pulse is organic disease of the brain. Out of 100 cases of pulsus infrequens, according to Grove, 6 were due to heredity, 24 to arterio-sclerosis, 10 to digitalis, 9 to nervous conditions and 43 occurred during convalescence from serious and exhausting illness. The extent to which infrequent pulse may proceed without death intervening is illustrated by cases reported in which the cause was some lesion of the brain. In one patient with bony pressure on the medulla the pulse was for a considerable period, seven per minute. In another patient the pulse was but four per minute. These very slow pulses are usually due to lesions at the base of the brain. It is often said that abnormal increase and decrease in the frequency of the heart-beat is due to the presence of a lesion of the accelerator or inhibitory nerve of the heart. This theory is not as widely accepted as it used to be. It is evident now that conditions of the heart muscle itself may cause especially slowing of the pulse. It must not be forgotten that the first spontaneous motion observed in the fetus of all animals is the rhythmic contraction of the vascular fold that is later to become the heart muscle. This occurs long before any nerves are present.

Stokes-Adams Pulse.—Dr. Satterthwaite said that very slow conditions of the pulse, as in Stokes-Adams disease are compatible with long life, even though the condition may be accompanied by a long period of unconsciousness. In one of his patients unconsciousness continued for a week, the pulse beats being slower than the respiration; yet two years afterward the patient was apparently well. There is a group of gastro-intestinal irritations which affect the heart. In these cases it is always important to decide whether the pulse beat and the heart beat are equal in number. Not infrequently will it be found that they are not synchronous.

Prognosis and Treatment.—The prognosis of these cases of pulsus infrequens is on the whole unfavorable. It is important to remember that as a rule no attempt should be made to accelerate the pulse by treatment. The heart must be let go its own way and there must be no whipping of it into extra activity. Alcohol must be used with care and the nitrites will often be found of service, but their use depends upon the general condition. Sedatives rather than stimulants do good. The most efficient remedies are Hoffmann's anodyne, camphor, valerian and occasionally the bromides. Before any treatment is undertaken, it is important to consider whether the condition is physiological or pathological, and if it involve both the heart and the pulse, or if it is the pulse only that is infrequent. There is a distinct danger from the use of digitalis. Hydrotherapy and compressed air may give service in the treatment of these conditions whenever there is discomfort. On the whole, however, it must be said that our knowledge of the condition is inadequate and there is plenty of opportunity for clinical investigation of a most valuable kind.

Differing Localization of Arterio-Sclerosis.—In opening the discussion Dr. E. Libman of New York said that often the sclerotic process in the arteries is limited to a very small area. There may be atheroma of the aorta with no further sclerotic changes. This atheroma may cause nodules around the openings of the coronary arteries that may involve the beginnings of the coronaries and no further. In the abdominal arteries there are often strictly localized areas of arterio-sclerosis. Not infrequently there is a sclerosis of the splenic artery with multiple aneurisms. In one case seen not long ago there was a congenital stenosis of the aorta, yet the man had reached the age of sixty-two. In another case there was quite long life in spite of primary atheroma of the pulmonary artery. Atheroma is not so infrequent as has been thought. Curschmann has pointed out six cases under the age of twenty-five. Arterio-sclerosis has been known to occur in a girl of sixteen. Riesmann has recently published a case of calcification of the arteries of the abdomen of a child. There may be distinct atheroma of the aorta and yet no peripheral thickening of the arteries. There may be a sclerosed, tortuous, radial artery without any affection of the aorta. Curschmann insists that the arteries on both sides of the body should always be examined, for when there is arterio-sclerosis on one side it may not exist on the other. Edema of the lungs is not infrequently due to arterio-sclerosis. Localized sclerosis in the brain sometimes gives rise to peculiar symptoms. Other parts of the nervous system may suffer in the same way. Intermittent claudication may occur, that is, the patient may limp and at other times be able to walk straight, as the consequence of circulatory disturbances due to degeneration of the arteries of the nervous system or of special parts of the leg. Not infrequently in these cases a fatal termination comes as a consequence of gangrene, showing that there was also arterial degeneration in the affected limb itself.

Arterio-Sclerosis and Liver Sclerosis.—Dr. A. L. Benedict of Buffalo said that liver cirrhosis or sclerosis is much more dependent on degeneration of the arteries than has been thought. It is not alone the presence of the alcohol in the liver itself and its influence on the arteries with consequent disturbance of the general metabolism that initiates the sclerotic condition of the liver. The use of hot air baths has been forbidden in arterio-sclerosis, yet undoubtedly they help elimination and serve as a form of exercise for the excretory glands of the skin which must learn to bear their share of elimination owing to the sclerosis of internal organs.

Stokes-Adams Phenomenon.—Dr. Elsner of Syracuse, N. Y., said that the Stokes-Adams phenomenon is not so infrequent as has been thought and will be recognized by many practitioners who are on the lookout for it. The infrequent pulse of this affection may sink as low as twenty to thirty and be even slower than the respirations. The prognosis is not as bad as might be expected, for Dr. Elsner has known a patient to live for twelve years after an attack of this kind, complicated by rather prolonged unconsciousness. In these cases there may be repeated apoplectiform attacks, yet without focal lesions. On the other hand such diseases may run a very rapid course. It is not as easy as has been thought to diagnose infrequent pulse. The spygmograph tells the true story much better than the unaided finger. In this way, differences between the heart rhythm and the pulse rhythm that cannot be detected even by the phonendoscope may be revealed. Abortive systoles make their appearance in the sphygmographic tracings that give no indication to the palpating finger, or the listening ear. Dr. Elsner said that even when the arteries at the wrist show absolutely no changes there may still be attacks of true angina. It is wrong to assume because the palpable arteries are not thickened and tortuous that pains in the region of the heart are only due to pseudo angina and not to some change in the structures of the heart itself, or its supplying nerve. In erythromelalgia, the so-called Weir Mitchell's disease, recent observers have found evidence of changes in the arteries to the parts. Intermittent claudication is undoubtedly another sign of arterial degeneration. Usually, however, in these cases, the degenerative changes have proceeded to a very marked degree. Their progress may be very insidious and attention may not be called to the progress of the affection until very serious changes have taken place. The wonder often is that the condition is not detected before it is in these cases, since the arterial changes are so marked when the patient comes under observation.

Gastralgia and Arterial Degeneration.—Dr. Stewart said that exaggerated gastralgia is evidently quite often a sign of true arterial degeneration, though the heart and artery condition may not be suspected. A patient that had recently been under her care had suffered with intermittent recurring attacks of gastralgia for twenty years. Before his death, however, typical symptoms of true angina developed into which the gastralgia merged itself. The painful attacks were so severe that the patient frequently required a grain of morphine to give him any comfort. Toward the end, very curiously, these attacks occurred regularly every morning about two o'clock for several weeks.

Heredity and Arterio-Sclerosis.—Dr. James J. Walsh, of New York City, said that one element and a most important one in the etiology of arterio-sclerosis has not received the attention and discussion that it should. Heredity undoubtedly plays an important rôle in the development of arterio-sclerosis. Every physician knows of families, all the members of which die from precocious senility or as the result of the lowering of resistive vitality under or about fifty years of age. In these cases it is practically always the arteries that show the signs of the early degeneration and that give the hint of breaking up that is coming. In the prognosis of severe infectious diseases in patients, members of whose families have dies about middle life or a little later it is well to remember that the prognosis is distinctly dependent on the family prognosis tendency to shortlivedness. To neglect this element in the case will frequently lead the doctor to give a favorable prognosis, when it is justified by all the circumstances of the case.

Acquired Slow Pulse.—Dr. Walsh said that cases of acquired slow pulse, or pulsus infrequens, are not so rare as is sometimes thought. He has a patient under observation whose pulse never rises above 40, in whom there seems every reason to think that the condition is acquired. She suffered from most of the diseases of childhood without her attention ever having been called to the fact that she had a slow pulse. In 1891, she suffered from a severe attack of grip during the convalescence from which her physician called her attention to her slow pulse. Since then her pulse has under normal conditions been 36 to 38 per minute. The pulse corresponds exactly with the heart beat. She has been a theatrical dancer and has worked hard at other occupations without suffering any inconvenience. The use of atropine makes her heart beat somewhat faster, but this makes her more uncomfortable, rather than less. None of the other members of her family show any signs of the condition. When she catches cold the course of the slight infection is about the same as that of other suffering from the same condition.

Arterio-Sclerosis in the Young.—Dr. DeLancey, Rochester, in closing the discussion, said that arterio-sclerosis is by no means confined only to those advanced in years. He has seen examples of well-marked sclerosis in recent years, in patients who were respectively twenty-nine, thirty-one and thirty-eight years of age. In these cases the arterial degeneration was not confined to any one part, but involved practically all the palpable, peripheral arteries. With regard to arterio-sclerosis, localized to one area there are reports from the pathologists that show its occurrence not infrequently in young children, or in early youth.

Arterio-Sclerosis as a Mortality Factor.—Dr. Charles G. Stockton said that arterio-sclerosis does not occur frequently in the mortality records, because death comes to these patients usually not as a direct cause of their arterial condition, but from some secondary factor. Usually this intervening cause is one of the infectious fevers, as typhoid, or pneumonia. This obscures somewhat the importance of the condition. There is no doubt, however, in the minds of those who observe their cases carefully, that arterial degeneration is the most prominent factor in many deaths. It represents the element which is sometimes spoken of as what the patient takes into the disease with him. Needless to say arterial degeneration in a case of pneumonia is almost sure to lead to a fatal result.

Heredity and Localized Arterio-Sclerosis.—Dr. Thomas E. Satterthwaite said that heredity undoubtedly plays a very important rôle in the production of arterio-sclerosis, even when the arterial degeneration is very distinctly limited in the area which it affects. It may be a family trait to have early degeneration of a single cerebral artery like the Sylvian. It is undoubtedly because of this that apoplexy occurs in certain families at a comparatively early age and in different members of almost exactly the same age. Another hereditary degeneration of arteries occurs at the base of the brain. Some of the anomalous cases of hemorrhage after slight trauma are undoubtedly due to arterial degeneration affecting the important vessels situated here.

Treatment.—The iodides by clinical consensus do accomplish much for arterial degeneration. They must be used, however, for long periods. For months or even for years. The iodides alone, if used for such long periods, may prove depressant. Combinations of the remedy, however, with iron or arsenic may do away with this undesirable effect. Iodides of arsenic or of iron may be used for long periods in these cases without harm and with excellent effect. Dr. Satterthwaite said that hot air has been spoken of as a possible remedy in these cases, but his own experience with this agent, which has been rather extensive, would not lead him to make much use of it. It makes patients very irritable and not infrequently causes an insomnia which is extremely difficult to overcome.

Teaching Phlebotomy.—Dr. Thomas Manley of New York said that unfortunately venesection has fallen into a desuetude that is not entirely innocuous. Very often physicians hesitate to perform venesection because they have never seen the operation done. It is humiliating to see the recent graduates of even distinguished medical schools blunder around in trying to open a vein in the patient's arm. There should be a distinct teaching of the method and technic of phlebotomy, since there are certain conditions in which the operation must be done, and when needed as a rule there should be no hesitation about its employment, since the conditions for which it does good are serious and delay is dangerous.

Hepatic Ballottement.—Dr. A. L. Benedict of Buffalo demonstrated the technic of a diagnostic method by which the size, shape and consistency of the liver can be felt with much more assurance than by the ordinary method. The demonstration was made upon an individual whose ribs were not as yet calcified. The method consists in producing an up and down motion with the ulnar surface and the finger ends of both hands so that penetration deeper into the abdomen is secured and the liver is made to move. The principle underlying the method is that it is easier to feel and outline a moving body when covered than one absolutely at rest. By this method the exact location of the lower border of the liver can be shown rather easily and with satisfaction to the examiner.

Third Day—Thursday, January 29th.

X-rays in Cancer of the Cervix.—Dr. Thomas S. Scully of Rome, New York, said that our present treatment of cancer of the cervix uteri is rather discouraging. If found at an early stage, and complete hysterectomy is done there is some hope of saving the patient's life. Nothing short of hysterectomy, however, gives the patient any hope. In later stages it is recognized that the cases are practically hopeless. Even under the most favorable circumstances, however, complete hysterectomy is followed by an alarming number of recurrences with fatal results. Surgeons would welcome any additional treatment that would give promise of lessening the awful mortality from the disease. The first case that came under Dr. Scully's attention after he had resolved to employ the X-rays was a so-called cauliflower growth of the cervix. A metal shield was used at first but this produces electrical induction difficulties and is liable to cause local irritation. After the first employment of the X-rays, the patient began to improve and the growth gradually sloughed away. The tendency to hemorrhage ceased after a few applications and other parts of the growth began to shrivel up. After a number of applications the woman felt so well that, as she was summoned to a distance by her daughter's confinement and serious illness, she gave up treatment and has written that she considers herself cured. In the second case in which Dr. Scully employed them the X-rays at once gave relief from pain in urination and relieved the discomfort which had existed for a long time. There had been a very offensive discharge which began to diminish at once and ceased entirely in a few weeks. Now, as the result of some fifteen applications of the X-rays the cervix is practically obliterated, the patient has gained in weight, the ulcerating parts are healed over except at one portion of the posterior vaginal vault and the outlook is most promising. The patient herself is very well satisfied with the results obtained and there seems every reason to think that the local condition at least has been obliterated. All cases treated have been benefited. Dr. Scully then considered that while the present knowledge of the X-rays does not justify the putting off of operation in cases where the disease has not advanced very far, the X-rays should be employed in most cases of cervical cancer. In advanced cases, where palliative operations are employed, this method should be considered afterward and even after hysterectomy. Treatment by the X-rays may prevent development of recurrences.

Dr. Frederic C. Curtis of Albany said that the X-rays should certainly be tried in all cutaneous epitheliomata. So far they have given excellent results. There is no doubt also that with proper technic they will prove of service for cancer in other parts of the body. Their availability is only just beginning to be realized.

Cicatricial Contraction of Elbow.—Dr. A. H. Traver of Albany reported a case in which a patient suffered from cicatricial contraction at the elbow as the result of a burn from boiling oil at the age of four years. The cicatrices have been cut at the elbow but contraction has taken place subsequently. Dr. Traver raised a flap from the chest which was applied to the elbow, and later for the wrist he raised a flap from the thigh. In these cases the ends of the flaps were allowed to remain adherent to their original location, until secondary adhesions to the denuded portions of the arm were secured. Skin flaps were applied over other granulating surfaces. As a result, the arm has been made straight and is available for most purposes, though almost immobile before.

PHILADELPHIA OBSTETRICAL SOCIETY.

Stated Meeting, Dec. 4, 1902.

The President, Dr. John M. Fisher, in the Chair.

On the Labia Urethræ and Skene's Glands.—Dr. Howard A. Kelly, of Baltimore, said that under the term labia urethræ there was a well-defined important anatomical structure which has hitherto escaped the attention of clinicians. These labia consist, not in the rounded margins of the external urethral orifice which have been termed labia erroneously, but in well-defined lips or labia which project from two to four millimeters beyond the external meatus and by their mutual approximation cover and protect the orifice from the bacterial flora constantly bathing the vulva. If a trivalve speculum is introduced into the vagina and the blades separated the labia urethræ are also separated and the urethra is exposed.

They also exercise the physiological function during coitus of protecting the urethral orifice. Sometimes these labia project beyond the urethral orifice on either side like long elephant ears, much more conspicuous relatively than the labia minora in relation to the vaginal outlet. Sometimes they are long and narrow. In other instances one lip is long and the other short. The margin is generally an even one or slightly crenated. In one case a fimbriated margin was found. They disappear with age and with mechanical insults.

Skene's glands lie just within the urethra at the bases of these labia. The function of these glands is clearly to moisten the urethral labia, particularly during coitus during the violent displacement of the labia with the urethral orifice up into the vagina when the labia urethræ need constant lubrication to obviate the injurious effects of attrition; in this way they occupy a position relative to the urethral orifice corresponding to Bartholin's glands in their relation to the vaginal orifice.

Disease.—Their affections are catarrhal or gonorrheal. The speaker cited one case which was possibly a cyst of the left gland due to a closed duct. They may be treated by injection, incision or excision. In order to inject them Dr. Kelly showed a little syringe which fully met all the requirements, consisting in a delicate blunt pointed cannula about five cm. long and one mm. in diameter, a piece of simple rubber tubing drawn over the end of the larger cannula after closing the open end, then made an excellent syringe, serving by the elasticity of the walls of the tubing to draw a few drops of fluid up the cannula. With a simple syringe of this sort the amount of fluid injected was also fully under control. After citing a number of cases treated by injection and by excision, Dr. Kelly referred to an interesting case in the hands of Dr. Hunner, his associate, in which smegma bacilli were found in the abundant secretion from one of these glands, showing how readily a tuberculosis of the urinary tract might have been inferred even though the vulva had been cleansed before the patient passed her water.

Dr. R. C. Norris said that all, of course, have been more or less watchful of Skene's glands just as they had learned to be of Bartholin's glands to enable one to make a diagnosis and not to overlook any case supposed to be gonorrheal. It is his own practice to look for the so-called gonorrheal maculæ of Sanger in Bartholin's glands and for a similar appearance in Skene's glands to aid in a snap diagnosis, as it were, of gonorrheal infection, later to be studied more accurately by bacteriological investigation.

The description of the labiæ of the urethra given by Dr. Kelly has been exceedingly interesting. He was sorry he did not go into the microscopical study of their anatomical structure. It is frequently noted that women who have borne many children have a puffy, red, swollen and sometimes eroded area at the orifice of the urethra, which, however, produces no pain and is not associated with the characteristic symptoms of caruncle. He had wondered whether or not these folds have anything in their microscopical structure to throw light upon the difference between the exquisitely painful caruncle and the erosion or vascularity above referred to which is unassociated with pain. Dr. Kelly no doubt has had sections of these labiæ made, and it would be interesting to know his results. Furthermore, with his larger experience in the study of these cases and his work in the urethral tract, he would like to ask whether, in addition to the silver preparations and carbolic acid named, he has used any of the newer silver salts supposed to be of peculiar value in the treatment of gonorrhea. With the small area to be attacked and the results obtained so readily studied it would seem to be an excellent opportunity to test thoroughly these newer preparations. He had been making use of them in gonorrheal cases but his observations had not been sufficient to draw definite conclusions. He thought that no man had done his whole duty in studying a suspected gonorrheal case until Skene's and Bartholin's glands had been accurately studied. Dr. Kelly's remarks are also of much interest concerning the macroscopic appearances of Skene's ducts and the delicate sense of touch which enables one to find these ducts. These facts should be of use to the general practitioner who has neither the time, knowledge nor the facilities, to study the condition bacteriologically.

Dr. John C. Da Costa said that for him it had been a problem how to inject Skene's glands. He had Dr. Kelly show how. In two cases had within a week, he would have liked very much to have injected the glands. He took a rough and ready mode of cleaning them out. It was very simple, taking a small triangular probe with sharp edges inserting it into the glands, by twisting it around he hoped to set up an inflammation and thus extinguish them. Both had been cases of gonorrhea.

Dr. Kelly in closing said he would that the gentlemen would do him the favor of giving close attention to the anatomical structures he had described. Do not draw conclusions from the first two or three women examined. The best defined urethral labia will be found in younger women where the vaginal orifice is relatively intact. He had not yet been able to make microscopical examination of these structures, as he would not be justified in cutting off the tissues in the living patient, and he had not been able to secure a recent cadaver. He would expect that they would be much like the hymen in structure as they seem to form a part of the hymenial system.

Dr. O. H. Allis said he was especially interested in one point, the point that Professor Dickson used to speak of, that all physicians should wear gloves, and that their hands should be kept very delicate and very sensitive. For many years when he had been at the seashore he had amused himself with washing his hands with the sand and had found how thoroughly it took off the outer coat, the tough and corneal portion. He likes to wash his hands with sand about once a week. It is an ordinary experience for a surgeon to have some one see him who has a foreign body in some part; like a needle that has been run into a child's limb. Unless the fingers are very delicate they are apt to not detect it. When Dr. Kelly said he could feel these little ridges with his finger he took it for granted that he either wears gloves or washes his hands with sand once a week or perhaps every day, or perhaps he has an exceedingly delicate skin. He said he shook hands with some surgeons and he would think they worked on the road with the pick. His own hand, although he had not done any hard work for years, is dry as a chip and has a tendency to a corneal surface.

The nitrate of silver has been so satisfactory in varying solutions that although he had occasionally tried the other preparations, he had gone back to it, and he did not feel justified in making experiments. He was waiting for other clinics, especially the men's genito-urinary, to settle the relative value of the silver salts. In giving massage to the urethra and the glands he makes a glove for his finger by wetting a thin layer of cotton and then applying it like a little cap over the last joint of the finger which in this way protects the skin and tissues. Sanger in agreement with Dr. Allis is emphatic as to the value of sand in keeping the hands fair, soft and clean, and Kroenig in Leipsic says that it is one of the best agents in removing the epithelial roughness always found on the hands of those using bichloride of mercury.

THE HARVARD MEDICAL SOCIETY OF NEW YORK CITY.

Regular Monthly Meeting, held Saturday, December 27, 1902.

The President, William B. Coley, M.D., in the Chair.

A New Method of Correcting Flexion Deformity at the Knee.—The scientific business of the evening was opened with a paper by Dr. Royal Whitman who said that there is no deformity which is more difficult of correction than this. There is often a condition of complete backward dislocation complicating the flexion. Correction is followed by displacement of the joint surfaces of bones in such a way as to produce a turning of the condyles of the femur, or the production of a condition of subluxation, or of unstable equilibrium of joint surfaces so that dislocation easily occurs. Besides if the flexion deformity has continued for some time, there is apt to be shortening of the flexor muscles which makes straightening of the limb extremely difficult and also the inner condyle of the femur, because of the absence of a counter pressure at the head of the tibia becomes deformed. Hence the difficulties in correcting the flexion and the frequent occurrence of subsequent operative subluxation.

Backward Dislocation.—Dr. Whitman exhibited an X-ray photograph which a physician had recently sent to the Vanderbilt clinic. In treating a patient suffering from flexion at the knee the doctor had divided the hamstrings and then forced the limb into a straight position. The result had been a backward displacement that was deforming and the X-rays showed very clearly the malposition of the joint surfaces. The physician wrote to ask why he had failed. In these cases even considerable traction does not succeed in overcoming this tendency to backward dislocation.

New Technic.—Usually in correcting the deformity, the patient lying on the table, the end of the femur is the fixed point and the tibia is used as a lever. Dr. Whitman, during his recent service at the New York Hospital for Ruptured and Crippled, thought that it might be well to attempt correction in just the opposite way, using the femur as a lever and having the head of the tibia as a fixed point. This can be accomplished by putting the child face down on the table and holding the head of the tibia firmly in position on the table, pillows being employed so as to make the child's position comfortable with the femur in the deformed position. Before attempting much leverage thorough massage of the hamstrings is done. As soon as the deformity is corrected the tendency to knock-knee may be overcome forcibly. Instead of applying force all at once alternate tension and relaxation of the contracted muscle is employed and massage judiciously applied to secure muscle stretching. While ordinarily the pain after correction of flexion deformity of the knee is very great, after this method of treatment the discomfort is very slight or there is no complaint at all, if the limb is fixed in the corrected position in a plaster bandage. The pain would seem to be due to mobility and to the pressure produced by effusion and if these two factors are overcome by a carefully applied plaster bandage the result is greatly to the comfort of the patient. Where it is impossible to straighten the limb by this means osteotomy of the femur above the joint may be done and then a range of motion secured at the point of greatest usefulness.

Dr. Whitman considers that this method of treatment may be useful not only in cases of flexion at the knee-joint that occur as a consequence of pathological conditions in children, but also deformities that arise from infectious processes in adults, as gonorrheal arthritis, or typhoid arthritis.

In discussing Dr. Whitman's paper Dr. Cilley said that he has seen Dr. Whitman's method in actual practice at the Hospital for Ruptured and Crippled and it undoubtedly gives better results than any method that has thus far been employed. The ultimate results are as yet not known, but there seems no difficulty in retaining the limbs in their proper positions after the manipulation.

Children that come back seem not to have suffered much discomfort during the course of the treatment and their conditions are very satisfactory.

In answer to the question, Dr. Whitman said that of course the reposition of the limb to its straight condition is only a preliminary to the after-treatment which by proper fixation must secure the permanency of the good position.

Acute Mastitis in Typhoid Fever.—Dr. Charles Schramm said that he wished to report a unique sequel to typhoid fever which very rarely occurs and which he himself had never seen before. The disease was of a mild type without any unusual features and during convalescence when the temperature had already been for over a week perfectly normal an acute mastitis developed. The patient was a young woman of thirty, married who had had one child and there seemed to be no reason for the localization of the typhoid bacillus in the situation which it took up. At first there was very little pain with the pathological condition and the patient's attention was attracted by an enlargement of the breast. In two weeks the right breast was twice the size of the left. The axillary glands were recognizable, though but very slightly enlarged and were not tender. The breast became quite adherent to the muscle underneath and there was a tense hard feeling that in connection with the immobility might easily have been thought to indicate malignant disease, if the circumstances of the patient and her history were not well known to the physician. On deep incision about two tablespoonfuls of pus were evacuated in which a pure culture of typhoid bacilli was found. The abscess developed at a time when the patient was running an afebrile course and during the enlargement of the breast until the actual formation of pus no temperature was noted. With the history of typhoid it seemed clear at once what the pathological condition present must be. But in ordinary surgical work, without a definite history or if the latency of the bacillary action was prolonged for several months instead of several weeks, there might be some difficulty in differentiating the condition from true malignant disease.

Fractured Spines.—Dr. Royal Whitman said that it is the custom to make a diagnosis of fracture of the spine only when the fracture is complete and when a portion of displaced bone, pressing upon the spinal cord causes paralysis. Personally he is of the opinion, however, that many more fractures of the spine occur, than are usually diagnosed. In a recent case under his care a child had evidently suffered a fracture of the spine as the result of an accident. The little patient fell three stories and was taken to a hospital. Careful examination seemed to show no fracture or dislocation in the limbs and though the child complained considerably of its back, its general condition was so good that after three days it was sent home. It did not get better and a marked bending forward of the upper part of the spine with a prominence in the dorsal region developed. Dr. Whitman found evidence of fracture of the spine and succeeded at the end of three weeks in straightening it and putting it into a plaster dressing. This manipulation would have been much more easily accomplished immediately after the accident than three weeks later, but the difficulty is that surgeons have not yet grown accustomed to looking for and recognizing fractures of the spine that do not cause paralysis.

Illustrative Case. —In another patient who has been under Dr. Whitman's care the man fell twenty feet and was pronounced to have no fracture or dislocation. He remained in bed for ten days and when he got up was quite bent over. As time went on his deformity increased. Later a certain tendency to rheumatic arthritis with anchylosis of the vertebræ occurred. This caused some difficulty of breathing. It seemed clear that the callus formation set up in the broken vertebra had stimulated the throwing out of other pathological bony material that led to a sort of traumatic arthritis deformans. The patient was straightened over a table and realizing that with the perfectly straight lumbar spine and a straight back walking would be impossible, a certain amount of bending forward of the lumbar spine was accomplished at the same time. It seems clear in many cases that the round shoulders and forward projection of the head and upper part of the body are really part of a compensatory curve of the spine to make up for the absence of a curve in the lumbar region. While this forcible straightening of spines affected by arthritis deformans has in some cases given rise to serious nervous sequelæ, in the present case the results were all that could be desired. During the straightening process the arms were pulled very vigorously and as a consequence there was for a time after the operation some atrophy of the arm muscles. This improved rapidly and has now completely disappeared. A year after the operation the man was four inches taller and his shortness of breath had entirely disappeared. The patient himself felt that he had been quite made over. He has gone back to his ordinary work and is very well satisfied.

Expectant Treatment in Fracture of the Spine.—Dr. William B. Coley gave the details of a case recently under his care in which a patient nineteen years of age, had, while picking apples, fallen some twenty feet with a resultant fracture of the spine. In the lower dorsal region definite crepitus could be felt and besides the paralysis of the legs there was absolute paralysis of the bladder and rectum. The case seemed very unfavorable and in consultation with a prominent neurologist it was decided not to operate. The patient was put on a water bed and in six weeks had regained most of his power of movement. After two months he could move around quietly as well as ever. If an operation had been performed it would have been considered to have saved the patient's life. It is evident, however, in these cases that conservatism and expectant treatment may be the best plan at times.

Peculiar Spina Bifida.—Dr. Eugene Fuller reported a case in which a man having acquired gonorrhea seemed to have developed an abscess in the perineal region. Careful examination, however, showed that much of the secretion did not come from the subcutaneous abscess cavity, but from a considerable distance back in the perineum and even beyond the anus. There proved to be a canal extending from the end of the spine down into the perineal region. The danger of his condition was represented to the patient, but he refused to permit any radical operation. He is still under treatment and there seem to be no special complications as a consequence of the anomolous tissue conditions.

Broncho-pneumonia and Malaria.—Dr. Potter said that it is not considered possible as a rule to mistake malaria for broncho-pneumonia, nor to find evidences of lung involvment as a consequence of malaria. In two cases recently, however, he has seen conditions due evidently to malaria, simulating broncho-pneumonia so closely as to make differentiation extremely difficult until the demonstration of the malarial parasite cleared up the diagnosis. These cases are all the more interesting as, of late years, the old malarial pneumonia that used to occupy a prominent place in the text-books and in medical literature has practically disappeared. In the first case the patient was a boy of eleven years, who had suffered from malaria four or five years ago. He was suddenly attacked by fever followed by some cough and considerable prostration. The temperature rose to 102° F. and while there were very few physical signs there seemed to be enough at the base of one lung to suggest some broncho-pneumonia. There was in addition a distinct bronchitis. On the next day the patient was apparently well, the temperature dropped below 100° F., the child was happy and hungry and the signs in the lungs had cleared up considerably. On the third day, however, the temperature was once more high, above 103° F., and there was considerable disturbance of the circulation with marked cyanosis of the lips. At this time there were some further symptoms at the left base, slight dulness with broncho-vesicular murmur. The spleen was enlarged. A count of the leucocytes showed twelve thousand, but there were no malarial parasites to be found. There was another interval on the fourth day in which the patient once more returned nearly to normal healthy condition, while on the fifth day there was a third exacerbation of symptoms. No malarial parasites could be found but the clinical course of the case, seemed to justify the use of quinine and once it had been prescribed, there were no further rises in temperature and the signs in the lungs promptly cleared up without more ado.

The second patient was a young man of twenty-nine years, born in New York City, who had always lived there, who had been hurt on the head at the age of five and was described by his friends as not strong in his mind ever since. As a growing boy he had lived in a malarial region and had suffered several times from malaria. The first specially noteworthy symptom in his case was a marked comatose condition, as a consequence of which he neglected to empty his bladder, or say anything about it; when it was noticed, some forty ounces of urine were removed with the catheter. The resident hospital staff found distinct signs of broncho-pneumonia and this was the diagnosis of the case. The lethargy, however, seemed to be much more pronounced than should be the case, if the pulmonary condition were the only basis for his symptoms.

Other Diagnostic Signs.—Careful examination showed the presence of an enlarged spleen, which was rather hard in consistency though only moderately tender. The patient's condition of apathy might, however, count for lack of complaint on deep pressure. The left lung was dull below the scapula and there was broncho-vesicular breathing with fine crepitant sounds at the end of expiration. There was a herpes in the moustache and at the nasal angle on the left side. Examination of the blood showed the presence of a few malarial parasites. The patient was given quinine and the condition promptly cleared up. In 24 hours no signs of broncho-pneumonia were left in the lung. The patient's apathy disappeared completely at the same time.

Differential Diagnosis.—The question of the differential diagnosis of malaria and broncho-pneumonia may not seem very important and yet at times it may prove difficult of decision. In answer to a question as to the pathological basis of the physical signs found in the lungs Dr. Potter said that in cases of pernicious malaria in which there had been severe cerebral symptoms Italian pathologists, specialists in malaria, had found a massing of malarial parasites in certain parts of the circulation of the brain. This caused a disturbance of circulation with consequent symptoms in the same way it would seem that malarial parasites may occasionally become massed in the arteries of the lungs and produce symptoms of consolidation.

Latent Malaria.—Dr. Daniels said that with regard to the diagnosis of malaria he is personally very hesitant unless he finds the malarial parasite. Malaria may be present but the clinical course of the case alone is not sufficient to justify a definite diagnosis. Many cases clear up as the result of the tonic influence of quinine without necessarily being malarial in origin. Pneumonia often runs a very irregular course and especially in children may abort or come to a crisis on the third or fourth day. The question of malarial organisms being present in the system for many years without producing any symptoms and then suddenly causing renewed attacks of malaria, seems to Dr. Daniels very doubtful.

Pneumonia Erratic in Children.—Dr. Schramm said that pneumonia in children is particularly apt to run a very erratic course. If there are signs of pneumonia then that happen to clear up shortly after the administration of a certain amount of quinine, this can scarcely be considered a proof of the malarial origin of the affection, since the malaria might very well have cleared up of itself. With regard to the latency of malaria, Dr. Schramm feels that the organisms may remain in the system absolutely without the production of symptoms for many years, their habitat seems to be the spleen or the bone marrow. Just how they maintain themselves without the production of symptoms and why they are sometimes carried out into the blood stream once more to produce their usual effects, while at other times they remain dormant, is not clearly known.

Broncho-pneumonia and Malaria.—Dr. Follen Cabot said there is no good reason for not thinking that broncho-pneumonia and malaria may run their course together. It may even happen that in a patient suffering from broncho-pneumonia who has previously had malaria and as a consequence has malarial organisms stored away in his spleen that the disturbance of the system by the fever and respiration difficulty may by lowering resistive vitality produce a condition favorable for the plentiful reduplication of the malarial parasites with the production of true malarial symptoms in addition to the broncho-pneumonia. In children the course of pneumonia of any kind, and especially of broncho-pneumonia is so variable that sudden changes for the better can scarcely be attributed with any assurance to any remedy administered shortly before. Dr. Potter said in closing the discussion that in the latter case the discovery of the malarial organism and the prompt disappearance of all the symptoms under the administration of quinine seemed to place beyond all doubt the diagnosis of malaria. In the child the clinical course of the case seemed amply to justify the same conclusion. Broncho-pneumonia does often run a very irregular course in children and sometimes clears up most unexpectedly. Broncho-pneumonia does not, however, give six to eight hours of fever and acute discomfort followed by an interval of about forty hours of comparative comfort and this by another spell of six to eight hours of temperature with another forty-hour period of relief and a third exacerbation. Between the times of febrile temperature the child was happy and hungry and played around freely on the bed as far as was permitted, which would be just the condition of affairs in malaria and would not at all occur if the case were true pneumonia.

Discovery of Malarial Organisms.—Dr. Potter said that it is often extremely difficult to discover malarial organisms. Just why this difficulty occurs is not known. At times the parasites seem not to be in the peripheral circulation at all, but only in certain parts of the internal circulation, where they cause the symptoms. Five or six negative examinations by no means exclude the diagnosis of malaria. Every microscopical diagnostician of experience has had cases in which after repeated failures the malarial organisms were subsequently found.

Dr. Ogden said that a large experience in looking for malarial organisms had taught him that failure to find the micro-organisms in several examinations is no sure index to the absence of malaria. The parasites are frequently not found in the first examinations, especially in estivo-autumnal fever.

Abolition of Board of Coroners.—Dr. Brannen moved that a committee be apointed to further the present movement with regard to the abolition of the Board of Coroners in New York County. This subject has been taken up by other medical societies and the weight and influence of the Harvard Medical Society should be lent to the movement. Dr. Brannen said that ten years ago an effort was made to do away with the coroner's office in New York, but it was found to be a constitutional office and hence could not be abolished. Under the new constitution, however, this is no longer the case. Erie County has recently had a bill passed doing away with coroners and the new system is a source of congratulation in Massachusetts, the abolition of the old coroner system and the creation of a Board of Medical Recorders has given excellent satisfaction. The material that now passes through the coroner's hands is used in Boston in various ways for teaching purposes and the physicians who make autopsies have published a series of excellent papers with regard to very practical medico-legal points involved in the case. Dr. Brannen's resolution was adopted unanimously.

NORTHWEST MEDICAL SOCIETY OF PHILADELPHIA.

Regular Meeting, Dec. 2, 1902.

The President, Wendell Reber, M.D., in the Chair.

Rheumatic Tonsillitis in Children.—This was the title of a paper read by Dr. John Stewart. The author divided tonsillitis into two classes, catarrhal and rheumatic, and stated that while many writers asserted the condition was confined to the membranous portion of the glands many cases had come under his observation which had involved the entire gland. The disease may occur at any age, although most frequent in children between five and fifteen years of age; the attacks are usually recurrent, with a varying length of time intervening; oftentimes there is a family predisposition to the disease. The disease is frequently accompanied by muscular and articular rheumatism, especially the latter, and may partake of the nature of an epidemic, more particular in the fall of the year during the rapid changes in the weather. It is generally due to a rheumatic poison in the circulation, but chronically enlarged tonsils are very apt to assume this state upon the slightest provocation, such as exposure to cold, wet, etc. The paper will be given in full in the MEDICAL NEWS.

Dr. William L. Pepper felt that there were but few cases of true rheumatic tonsillitis occurring in children, the majority of cases of tonsillitis being caused in his opinion by the formation of lactic acid in the stomach, which upon its absorption by the tonsils produced inflammation. For the treatment of the disease local applications of peroxide of hydrogen which tends to antisepticize and oxidize the parts and thus prevent the absorption of germ excretion, biniodide of mercury and in the beginning stages of the disease free purgation by the use of one-tenth of a grain of calomel every five minutes until one grain is given were recommended.

Dr. A. B. Kirkpatrick remarked that he believed the large majority of cases of tonsillitis were caused by some infection, which is particularly apt to occur when the organs are enlarged and adenoid tissue is present, and that in his experience but very few cases of the true rheumatic variety had been observed in children. One reason for this being the fact that children are not as a rule excessive meat eaters, which has somewhat of a tendency to the production of a rheumatic diathesis. In those cases in which there is a history of a family predisposition to a rheumatic or uric acid diathesis, the condition would be more likely to occur. The usual symptoms of elevated temperature, malaise, chilly feeling, etc., are present no matter what the source of the infection, and frequently in a child with enlarged tonsils a slight cold will cause an onset of an attack of the disease. Many of the cases which are due to indigestion will yield in from 24 to 28 hours to treatment with calomel, phenacetin and bicarbonate of soda, and if there is enlargement of the submaxillary or sublingual gland local applications of ice will be of value. Ammoniated tincture of guaiac, iron and chloride of potash were felt to be of little if any value and the former in addition to being of little if any benefit to the disease was very apt to produce a disordered digestion. In rheumatic tonsillitis, biniodide of mercury and the salicylates were recommended and in cases of abscess formation local applications of peroxide of hydrogen were thought to be of value.

Dr. Harry Lowenburg said that in the several cases of follicular tonsillitis on which he had used biniodide of mercury the results had not been very satisfactory. In regard to the diagnosis of rheumatic tonsillitis he felt that it would be difficult to be certain of this fact unless there was a family or previous personal history of a rheumatic condition, which in the case of children he thought was more frequently manifested in the shape of growing pains than in cases of acute articular rheumatism.

Dr. Frank C. Hammond felt that salicylate of strontium was of more value than either salicylic acid or salicylate of soda as it could be administered in large doses without any untoward results.

Dr. Carle Lee Felt stated that he agreed with the previous speaker that it was not possible to be sure of the diagnosis of rheumatic tonsillitis, without a previous history of rheumatism. For the treatment of the infectious variety of the disease, local applications were felt to be of value, but in rheumatic tonsillitis, it was recommended that they be strenuously avoided. Calomel, sodium salicylate and benzoate of soda, were recommended and the opinion expressed that many cases if left alone would get well of their own volition in seven or eight days. Where there is a bluish appearance of the throat, with considerable pain, no membrane and very little, if any swelling, it was thought to indicate rheumatic tonsillitis, and the condition was thought to be aggravated by excessive meat diet, coffee, tobacco or alcohol.

Dr. Samuel Wolfe said that he believed that there were very few cases of true rheumatic tonsillitis in which suppuration was present, those cases being usually produced by infection. Rheumatic conditions of the throat he believed were more apt to attack the pharynx than the tonsils, thus following the rule in other parts of the body that rheumatism is more apt to attack the fibrous portions. The rheumatic variety is usually associated with other rheumatic symptoms in various parts of the body, on inspection there is usually very little if any inflammation, but a great amount of pain, which is decidedly intermittent, and the duration may be for a variable length of time. For the treatment of the rheumatic variety salicylates were recommended as a means of checking the disease for a time and in some cases will probably effect a cure, but as a rule the constitutional seat of the disease must be acted upon by some other remedy. Where there is an inflammatory phlegmonous or catarrhal condition, guaiac and the early application of ice, externally and internally were recommended.

Dr. Samuel P. Gerhard felt that the term rheumatic tonsillitis was rather a misnomer, except in cases where there was a history of rheumatic diathesis, and stated that in cases where the tonsils were enlarged and inflamed he had obtained good results from the application of adrenalin, administered hypodermatically, if the tonsil is very large and patient will not have it excised.

Dr. William H. Good referred to the cases of two brothers who both have a history of gout, one has purpura of the rheumatic type and usually suffers from a bad attack of migraine two or three times a year, the other has rheumatic symptoms and usually has quinsy once or twice a year, and suggested the possibility of some connection between the quinsy and the rheumatic symptoms.

Dr. Wendell Reber stated that he believed the reason children so seldom suffered from rheumatic tonsillitis was the fact that they were out in the open air so much, rather than the restriction of their diet in reference to meat. In regard to the use of biniodide of mercury he related the case of a man, and several of children who had suffered from tonsillitis without suppuration, in each case the salicylates and biniodide of mercury being administered, and in every case the patient suffered in a few weeks after recovering from the attack of tonsillitis with paralysis of the muscles of accommodation.

Dr. Stewart in closing stated that all the cases upon which his paper was based had been cases in which the parents gave a history of a distinct rheumatic diathesis, and even although suppuration had existed in some of them he believed them to be of the true rheumatic variety. In regard to the ammoniated tincture of guaiac producing gastric disturbance, he felt that that could be avoided by giving it in connection with some other palliative substance. In regard to the use of adrenalin, he felt that was a temporary means of reducing very large tonsils; it was of great value particularly in conjunction with a ten-per-cent. solution of antipyrin, but that the result would not continue for more than five or six hours and would need to be repeated.

The discussion was opened by Dr. Wilmer Krusen who recommended a bimanual examination of all patients prior to the operation for pelvic disorders, which can be easily accomplished in the case of a thin woman, but in a woman with very thick abdominal walls, it is usually necessary to employ an anesthetic. Tight lacing and other causes forcing the intestines down below their normal position is responsible for many abnormal pelvic conditions, and also increases the danger of inadvertently cutting through some structure during the operation. A case was reported of a girl, seventeen years old, who had been suffering from nocturnal incontinency of the urine, caused by retroversion of the uterus and consequent pressure on the bladder, making it impossible for the latter organ to distend to any degree. Administration of bromide of ethyl and a relaxation of the parts resulted in the cure of the condition. In regard to operations on the round ligament, Alexander's operation was thought to be indicated only in those cases where there were posterior adhesions, the objections to it being the necessity for two incisions, and the consequent likelihood of double infection, and also the fact that it is made in the weakest part of the abdominal wall. The operation of ventrosuspension should only be done in cases where it is absolutely certain that pregnancy will not subsequently occur.

Dr. Frank C. Hammond commented on that fact that the modern method in appendicitis was to separate the oblique muscles rather than go through the abdominal wall, thus being much less favorable to hernia. In regard to drainage, vaginal drainage was thought to be preferable to drainage through the abdominal wound, as this does not interfere with closure of the incision at once.

The value of a bimanual examination of the rectum in all cases of pelvic disorder was commented upon, and this should be made in conjunction with the pelvic examination. Attention was called to the method pursued by Dr. Kelly of Baltimore, when he intends to do an extensive dissection, of inserting a flexible sheath in the ureter in order that he may easily trace out its course, and thus avoid injuring it.

In closing Dr. Thomas remarked on the fact of Alexander's operation being considered not a good one because it was a "blind operation." The gridiron incision for appendiceal operations was thought to be all right when not too much room was required.

THE MEDICAL ASSOCIATION OF THE GREATER CITY OF NEW YORK.

Annual Meeting, held at the New York Academy of Medicine, January 12, 1903.

The President, Andrew H. Smith, M.D., in the Chair.

Election of Officers.—Dr. Ransford E. Van Gieson, Brooklyn, was elected Vice-President; Dr. P. Brynberg Porter, Manhattan, Recording Secretary, and Dr. Arthur C. Brush, Brooklyn, Chairman for the Borough of Brooklyn.

The Treatment of Uremia.—Dr. William H. Thomson made the address of the evening on this subject. In the kidney, he said, experimental pathology has given us a strange paradox: The more you remove these organs, the more, apparently, will they excrete. Bradford found in dogs that if two-thirds were cut away, the animals lived on very well, and that they passed both more urine and more urea than before the operation. If, however, only one-fourth of the organs was allowed to remain, they lived for some time, though dying eventually. But as long as they survived, there was marked polyuria and increased excretion of urea; the muscles disintegrating into urea and so passing off by the kidney. It would seem, therefore, that a small part were greater than the whole. In explanation of the polyuria it is claimed that the glomeruli of the kidney are capable of draining off the entire serum of the blood, and would do so if the fluid were not re-absorbed. In cirrhosed kidney there is almost always considerable polyuria, and this is explained by the destruction of an extensive surface for absorption. The physiology of the kidneys is still imperfectly understood, and hence their pathology must be more or less uncertain; but clinical experience furnishes us with considerable definite information, so that the special conditions in different diseases of these organs can be recognized.

Obstructive Suppression of Urine.—Thus, instances occur in which persons apparently in good health suddenly find themselves unable to pass a drop of urine. Here there is obstructive suppression, and the cases are peculiar and distinctive. Some time ago he was called in consultation to see a healthy-looking German who had not passed a drop of water for eight days. The man was sitting up, and stated that, except for feeling weak, he would not know that he was ill. When the attending physician was first called, eight days before, the only thing abnormal he noticed about the patient was some contraction of the pupils. The pulse was not especially tense, and there was no headache or any other of the ordinary symptoms which might have been expected. It was found that thirteen years before, the patient had been attacked with severe pain in the left flank and with high fever. After the fever subsided he found that he could not pass his water. The pain he described as of exactly the same character as that which preceded the present suppression. The only hope for the patient was to operate immediately, cutting down upon the ureter, which was unquestionably choked by a calculus. From the history it was evident that the left kidney had been obliterated by an obstructive stone, or stones, thirteen years before; so that he had only one kidney left. The attending physician asked why symptoms of uremia were not present, and Dr. Thomson told him that unless operated upon the patient would die, from simple asthenia, without a symptom. The operation was declined and two days afterward the man died in the manner mentioned. In uremia the condition is wholly unlike that seen in cases where the urine has been suddenly and completely suppressed. A careful study of uremia suggests the presence of more than one poison to produce the different symptoms noted; each having its peculiar and characteristic effects. He referred to one of these particularly, and to illustrate its manner of action he related the case of a lady sixty-two years of age. When rising from the table on one occasion, she was seized with a faint feeling, and fell to the floor. Placed in bed, she suffered from great restlessness and from headache, and was unable to raise her head without experiencing vertigo. An examination of the urine showed a little albumin and the presence of fatty and hyaline casts. She had a high tension pulse, and the heart was found to be dilated and extremely weak. At the end of two months, notwithstanding the use of various cardiac stimulants and also small doses of sodium iodide, the patient seemed to be losing ground. The daily output of urea at that time was only 120 grains, or about eight grams. She was then placed upon tincture of aconite, five drops every three hours continuously. When this was commenced she could not be turned in bed without much distress, but in a few days her improvement was very perceptible. The daily output of urea soon rose to 480 grains, and the heart's action became very much better. The aconite was kept up for six months, during which time she continued to improve. Twice during that period the aconite was reduced, but each time there was a return of the symptoms. At the end of the six months the nitrites were used in place of aconite for one month, erythrol tetranitrate being selected as having a more prolonged action than nitroglycerin. She began to fail again, however, and the output of urea went down to 150 grains. Accordingly, the aconite was resumed, and again the heart-action improved, while urea excretion increased to 450 grains. At the end of four months more the remedy was discontinued, and, under a carefully regulated mode of life, the patient has since steadily improved. In a large number of cases of kidney disease there can scarcely be a question that there is circulating in the blood a specific poison which is identical with the natural secretion of the suprarenal glands. The result of its action is that the heart hypertrophies, then dilates, and then fails. According to Dr. Thomson's observation, aconite is by far the most valuable of all remedies for dilating arterioles, and its effect generally lasts about three hours. In this case he believed that the heart was dilating and failing simply from overwork against the general arterial contraction.

Puerperal Eclampsia.—It was his opinion that it was a similar or identical poison with which we were confronted in some great emergency, such as puerperal convulsions. There is, however, another element, violent heart-action from excessive high tension in the arteries. In health there is a beautiful mechanism by which, whenever the tension rises, the vagus is stimulated to slow the heart; but in convulsions this inhibitory function is completely unbalanced. Should this continue, the intracranial pressure becomes so great that a *status epilepticus* sets in. Undoubtedly one of the best remedies for this condition of affairs is venesection. If bleeding is objected to, veratrum viride may be employed as a substitute for this, and it should be given in accordance to the symptoms present and the effect produced by it, and not simply in regulation doses. In cases of this kind aconite is too slow in its action, and it does not have the desired effect on the splanchnic area. Of veratrum viride it has been remarked that it bleeds the patient into her own veins. The pathology of puerperal convulsions has been the subject of much speculation. By some it is claimed that in normal pregnancy there is always an increased secretion of the thyroid gland, and that the lack of this induces a condition which often results in the production of eclampsia.

Cases in Which Aconite Must be Given with Caution or is Contra-indicated.—There are a number of conditions of high arterial tension in which aconite must be given with considerable caution. In arteritis obliterans no vasomotor dilator can be of much use; therefore when one has senile heart with rigid arteries such agents should be given only under special circumstances. Thus, if the pulse is rapid, as well as of high tension, aconite may be adminstered until the pulse comes down to 80, when it should be discontinued. He spoke here of a very common class of cases which are characterized by diminution of urea elimination, and yet in which one would never think of giving aconite; cases in which the patients complain of a great variety of symptoms which are extremely puzzling. Two illustrative cases were described. One was in an elderly gentleman who suffered from a tingling in the legs below the knee, vertigo, and a species of hypochondriasis. Sometimes there was insomnia and sometimes overpowering drowsiness. The other patient was an army officer who, during the Cuban campaign had malarial fever, with colitis. Later, in Ecuador, he had an attack of rheumatism. He had delirium and was comatose for two weeks. For six weeks afterward he suffered from headaches and a continuance of general rheumatic symptoms. Dr. Thomson's experience had taught him that when a great variety of anonymous nervous symptoms are complained of, especially in men, it may generally be safely concluded that there is present a toxemia of either gastro-intestinal or renal origin. The daily output or urea should therefore always be investigated in such cases. In one of these patients the amount was but 13 grams, and in the other, 15 grams (instead of from 25 to 30).

Acute Nephritis.—The typical form of acute nephritis is the scarlatinal. There is no relation whatever between the severity of the scarlet fever and that of the kidney disease, nor does the desquamation apparently have anything to do with the latter. There is not much that can be done in the way of prophylaxis, though the oiling of the skin may perhaps do some good. When nephritis has developed, the first danger signal is to be found in a diminution of the excretion of urea and a fall in the specific gravity of the urine. These occur before any albumin or casts make their appearance. When nephritis has once declared itself, the treatment ought to be very energetic. Dr. Thomson believes that the most certain of all diuretics is the thorough douching of the rectum with three gallons, or more, of hot normal saline solution (at a temperature of 115° F.). For this purpose Kemp's rectal irrigating apparatus will be found very satisfactory. There seems to be a very close association between the kidneys and the bowels, so that the evacuation of the latter is almost invariably accompanied by the voiding of urine, even if the bladder has been emptied but a short time before. In scarlatina probably the best prophylaxis against both severe fever and nephritis is a nightly dose of calomel. He did not think we need ever despair of a case of scarlatinal nephritis, and mentioned one in which recovery took place after the patient had actually been pronounced dead. The treatment was commenced by touching the skin in the region of the kidneys with tablespoons taken out of boiling water, after the method suggested by Brown-Séquard, and on the seventh application the child opened its eyes and recovered consciousness.

Treatment and Prognosis.—In cases characterized by such symptoms as mental cloudiness, asthma, and Cheyne-Stokes respiration he has often been able to ward off trouble by securing free action of the bowels, followed by diuresis. For these purposes he gives a calomel cathartic, and afterward 10 grains of urotropin, with 10 grains of sodium benzoate, every two or three hours. He has never seen any bad results from urotropin when thus associated with the sodium salt. The prognosis in interstitial nephritis is always uncertain, as we can never feel sure how much working kidney the patient has left. The diet is a matter of great importance. The quantity of highly nitrogenous food consumed, especially red meats, must be limited. There appears to be normally a balance in the system, so that increased intake of food is offset by an increased excretion of urea. If the kidneys are diseased, however, this balance is interfered with, and thus it is that we so frequently find attacks of apoplexy following upon Christmas and Thanksgiving dinners. Another thing that must be taken into account is the different state of affairs at different hours of the day. In all cases of Graves' disease, and often in melancholia and various other affections, the patients are worse in the morning, while the first attack of gout or of peptic asthma often occurs after midnight. In regulating the mode of life of those past middle age who have rigid arteries and a high tension pulse, it should be advised to avoid hearty meals at night. He thought it unfortunate that two such different affections as chronic parenchymatous nephritis and chronic interstitial nephritis should go by the common name of Bright's disease, as he did not know of any two diseases affecting the same organ which differed so greatly. While the former occurs more frequently in the young than in the old, and often in children, chronic parenchymatous nephritis is almost invariably met with in middle and advanced life. In the interstitial form of renal disease the albumin in the urine is small in quantity and not infrequently absent, and constitutes an insignificant feature, while in the parenchymatous it is constant and abundant. In the one the patient is never water-logged, except the dropsy is due to cardiac complications, while in the other such a condition is a striking and marked characteristic; so that the two classes of patients present a totally different general appearance. As diverse as the clinical phenomena observed are the pathological changes in the kidneys themselves. In the large white kidney the capsule can be stripped off as readily as the peel of an orange, while in the small, contracted kidney, the capsule becomes so firmly adherent as to appear to form a part of the tissue of the organ. In parenchymatous nephritis the glomeruli are squeezed and pressed together, and the tubules are clogged with an accumulation of débris of all kinds. While we do not understand just how the dropsy accompanying this condition is produced, we readily appreciate that we have here found a blocking up which has all the marks of a mechanical obstruction capable of neutralizing all our therapeutic endeavors. What we seem to lack in the kidney is a double blood-current such as is met with in the lungs.

The Production of Albuminuria.—As to the production of albuminuria, one observation by Overbach is certainly very suggestive. The simple clamping by the renal arteries in dogs for forty minutes was followed by albuminuria which lasted for twenty days. The pressure effects of an intercellular exudation upon the glomeruli would seem to produce virtually the same condition, an arterial ischemia, and thus explain the albuminuria which is present. In the amyloid kidney there is a mechanical interference from another source, but which acts in the same way as the inflammatory exudation.

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ORIGINAL ARTICLES.

A STUDY OF A BACILLUS RESEMBLING THE BACILLUS OF SHIGA, FROM A CASE OF FATAL DIARRHEA IN A CHILD; WITH REMARKS ON THE RECOGNITION OF DYSENTERY, TYPHOID, AND ALLIED BACILLI.*

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SEVERAL reasons have led us to report the results of our study of the organism isolated from this case of fatal diarrhea. Chief among these is the vital importance of establishing beyond doubt the etiology of the various forms of diarrheas and dysenteries. Upon such establishment of etiology must ultimately depend the rationale of hygienic, diagnostic, and therapeutic measures—especially those of serumtherapy, and diagnosis by serum reactions—upon which the recognition and cure of the disease or protection from the infective agent must be based. Moreover, there is the greatest need, in the present state of our knowledge of the etiology of dysentery, of the most careful study, description, and especially comparison of the bacterial forms supposed, in different cases and various localities, to be of etiological significance in the same or various forms of this disease.

As will be brought out more fully in detailing the peculiarities of the organism we are about to describe, the organisms isolated from cases of dysentery—apart from a determination of superficial resemblance in growth characters on the usual nutrient media and their reactions in the presence of the more commonly employed sugars—dextrose, lactose, and saccharose—have been largely identified by their supposed specific agglutination reactions in the presence of serum from dysentery patients and immunized animals. That there are serous objections to placing too complete confidence in such measures alone, we believe will appear from our study.

The bacillus of acute dysentery, or diphtheritic colitis, first described by Shiga[1] in 1898 as etiologically connected with the disease in Japan, and the bacillus isolated by Kruse[2] in 1900, from the same disease in Germany, have finally, after much comparison and discussion of minute differences, been recognized as identical species. Under the stimulus of Flexner's[3] work, the same species has undoubtedly been isolated from cases occurring in America, as is shown by the corresponding cultural characters and serum reactions of the organism isolated in New Haven[4], Conn., and known as culture "New Haven." Flexner's culture, isolated by him in 1899 while in the Philippines, is not admitted by all observers to be identical with the preceding, although Kruse—aside from the general weaker growth of the Flexner bacillus, and minor differences in its agglutinating reactions, which are, as a rule, less marked in serum from dysentery cases than the reactions of "Shiga," "Kruse" and the "New Haven" cultures—could determine no specific differences, and concluded that the variation was not greater than that occurring among various true typhoid cultures. Shiga[5], in his latest article, is practically of the same opinion, and claims to have gotten similar reactions to those given by Flexner's bacillus with cultures of his own, when these were grown for several generations in milk. From this he believes the Flexner bacillus to be simply a slightly modified form of the true *bacillus dysenteriae.*

Martini and Lentz[6], however, and particularly Lentz[7] in a separate article on the cultural differentiation of these organisms, claim to have found not only discrepancies in agglutination, but cultural differences of fixed value in the Flexner bacillus, as brought out in mannite-litmus agar (Drigalski's medium). To a discussion of this point we shall return later.

The bacillus which we are about to describe was isolated from the contents of a section of the colon of a child dead of an acute diarrhea. The patient was a child about one year old, who suffered from an attack of enterocolitis. The temperature was not high, never over one hundred. There was persistent diarrhea, from four to six stools every day. For the most part they were green and contained mucus. In the history there was no mention of any blood in the stools. The child lost strength progressively and died in two weeks.* [We are indebted to Dr. David Bovaird for the material examined, and desire here to express our appreciation of his interest in this work.]

Method of Isolating the Organism.—The method employed by us for isolating the organism was as follows: The contents and scrapings from the mucosa of the gut were diluted in broth and platings were made from this emulsion by transferring one to several loopfuls to the medium recommended by one of us (Hiss)[8] for isolating the bacillus of typhoid fever.† In this medium the colonies of the bacillus of Shiga do not form threads, as do the typhoid bacilli, and may usually be distinguished from the colonies of colon bacilli and allied forms by being smaller and lighter in color. Transplants were made from the small, light-colored, transparent colonies which were present, into tubes of the semisolid medium described by Hiss[9] in 1897. By the use of this medium, which appears to us much superior to the glucose agar recommended by other workers, organisms corresponding in character to the Shiga bacillus may be readily recognized. In this semisolid medium, when incubated at 37° C., the bacillus of Shiga, possessing no active motility, does not spread in the medium and cloud it, but growth is confined to the original line of inoculation. Neither does the dysentery bacillus form gas in the medium, from the one per cent. of glucose, which is present. All colon bacilli form gas in the medium and are also distinguished by other characters, more or less marked, which depend upon their degree of motility. Typhoid bacilli are readily differentiated by clouding the medium uniformly.

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* Read at the regular Meeting of the New York Pathological Society, January 14, 1903.

* Since making this communication another case of fatal enterocolitis, in a child of nine months, has been investigated by me, and a bacillus of the same species as the one here described recovered from the gut contents.—*Hiss.*

† This medium is composed of agar, 15 gm.; gelatin 15 gm.; Liebig's meat extract, 5 gm.; sodium chloride, 5 gm.; dextrose, 10 gm. No acid or alkali is added. See ref. 8, p. 156.

If some such semisolid medium as this had been employed, instead of dependence being placed on the microscopic test alone, much of the uncertainty and consequent discussion regarding the motility or non-motility of the bacilli described by Shiga and Flexner, it seems to us, might have been avoided.

As pointed out by Hiss some time ago, the character of the growth of the bacillus of Shiga in this semisolid medium in tubes and its inability to form threads in the typhoid plating medium were among the exceedingly few cultural characters until recently known by which this organism could be separated from the bacillus of typhoid fever.*

Description of the Bacillus.—An organism answering to the characters shown in the semisolid medium by the Shiga bacillus was found to be present in the gut contents of our case, and was subjected to various tests to determine, if possible, its further identity with various cultures of Shiga's bacillus. Three cultures of this organism sent to us by Professor Flexner have been studied. These, as has been stated, are the cultures known as "Kruse," "Flexner," and "New Haven." "Kruse" is the culture isolated during an epidemic in Germany. "Flexner" is, we believe, one of the cultures obtained by Professor Flexner while in the Philippines, and "New Haven," sometimes referred to as "Seward," was from a case of dysentery occurring in New Haven, Conn.

Morphology.—The organism is a short, fairly stout bacillus, with rounded ends, in some cultures almost coccoid in form. It occurs singly, but often in pairs, and rarely short threads may be seen. There is a tendency in some preparations to occur in clumps. The bacillus stains with the anilin dyes, but as is the case with Shiga's bacillus, the staining of all the bacilli in a preparation is not equally intense. Near well-stained individuals it is the rule to find many which have taken the dye very poorly. The staining of the protoplasm of individual bacilli is also at times irregular. The organism is decolorized by Gram's method. Spore formation has not been observed. The bacillus is not motile. Flagella stainings have not, so far, been made. No capsules have been noted.

In general morphology and staining reactions the organism answers most closely to that of the dysentery bacilli as represented by Kruse's culture. Flexner's bacillus is not so stout and is longer than ours, thus corresponding morphologically more closely to the bacillus of typhoid fever.

Cultural Characters.—The bacillus grows well on the usual culture media, and corresponds on these in all essential respects to the Shiga bacillus. Gelatin is not fluidified; nor is indol, according to our tests, produced. On the usual nutrient broth, which is clouded uniformly by the growth, a small pellicle may be formed after ten or twelve days at 37° C. When a fermentable sugar is present in the broth no pellicle is formed. The same observation holds good for typhoid and colon bacilli. This absence of pellicle is probably accounted for by the ease of obtaining oxygen from the sugar and subsequent inhibition of growth by acid production. A failure to recognize this fact has undoubtedly led to discrepancies in descriptions of organisms. Some facultative organisms, usually not forming pellicles, will do so in sugar free media, or at all events grow more abundantly in the upper portions where the necessary oxygen is present. None of our cultures of true *Bacillus dysenteriæ* have, however, formed pellicles.

Fermentation Tests.—A study of the organism in dextrose, lactose, and saccharose bouillon in fermentation tubes shows a complete correspondence with the bacillus of Shiga, as represented by the cultures "Kruse," "New Haven," and "Flexner." All of these organisms ferment dextrose with the formation of acid and a clouding of the open and closed branch of the fermentation tube. Neither lactose nor saccharose are fermented by any of these organisms, hence are not available for anaerobic growth, and the closed branch of the tube remains clear. These bacilli are not able to grow anaerobically in broth not containing some available carbohydrate or allied source of oxygen supply.

It has been the common practice in our laboratory for several years past to test organisms, especially those of the typhoid, Gärtner, and colon groups, in one per cent. mannite broth in fermentation tubes. A test of organisms in this medium has in our hands always served to differentiate cultures of Shiga's bacillus—"Kruse," "New Haven," and "Flexner"—from typhoid bacilli. This point was first noted about two years ago in our laboratory by Dr. Charles Norris, who in observing the fermentative activities of certain members of the typhoid and Gärtner groups, tested the cultures "Kruse" and "Flexner" sent to us by Dr. Flexner early in 1901, shortly after his return from the Philippines. Typhoid bacilli, Norris found, utilized mannite with acid production and clouded the closed branch of the fermentation tube, while the dysentery cultures could not ferment mannite, and did not grow in and cloud the closed branch of the tube, which in glucose free broth always remained clear.

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* Hiss: Jour. Med. Research, 1902, VIII, p. 165.

The organism isolated by us when grown thus in mannite does not correspond in its action to the cultures "Kruse," "New Haven" and "Flexner," but ferments mannite and clouds the closed branch of the tube, as do the typhoid bacilli. In bouillon made from maltose of high purity it can, however, be differentiated from typhoid cultures. Typhoid cultures ferment maltose with acid production and cloud the closed branch of the fermentation tube, while our organism does not ferment maltose nor cloud the closed branch.

It is well to note that cultures of Petruchsky's *Bacillus fecalis alkaligenes* can be distinguished from dysentery, typhoid, and allied bacilli by its inability to ferment any known carbohydrate (at least, anerobically) or to cloud the closed branch of the fermentation tube.

Serum-Water Media.—A most striking differentiation of organisms belonging to the dysentery, typhoid, Gärtner, and colon groups is afforded by a study of these organisms in serum-water media. This medium as a basis for studying fermentative activities was devised by one of us (Hiss)[10] for use in the differentiating of pneumococci from streptococci.

The medium is composed of clear beef serum, one part, and distilled water, two parts.* This mixture can be boiled without causing a coagulation of the albuminous bodies present. The medium after boiling is an opalescent fluid. As was pointed out in the original communication on this subject, this medium is practically, if not absolutely, sugar free. The original monosaccharid content of the blood is rapidly destroyed after drawing, by the action of the so-called glycolytic ferment of the blood. That this is still active in serum may be demonstrated by adding small amounts of dextrose to sterile serum, and then allowing this to digest at 37° C. for an hour or so. Subsequent fermentation tests with organisms will show that the sugar has entirely or partially disappeared, according to the amount added, as determined by acid or gas production. In using the medium as a basis for fermentation tests it is necessary to boil it before adding the sugars, as many of these are acted upon by the enzymes of the blood—diastase—maltase (glucase), etc. This may also be easily demonstrated by digesting the sugar, especially dextrin and maltose, for a short while in the unheated serum-water mixture, maltose being rapidly destroyed and split into dextrose, and dextrin quickly changed into maltose and then to dextrose. The medium is therefore made by first heating the serum water at 100° C. for a short time, and then adding usually one per cent. of the sugar desired. To this is added litmus solution (Merck's highly pure litmus, five-per-cent. solution in water) in the proportion of one per cent. The medium is then tubed and may be sterilized at 100° C. for ten minutes in three consecutive days without fear of changes taking place in the sugar from the application of the heat. The sugars so far tested by us are dextrose, galactose, mannite, maltose, lactose, saccharose and dextrin. These sugars serve eminently well to differentiate our organism from the dysentery bacillus of Shiga, and also to distinguish between these and organisms of closely allied characters, such as typhoid bacilli, *Bacillus fecalis alkaligenes,* colon and the organisms of the Gärtner group. This is shown by the following tests of organisms:

Bacillus fecalis alkaligenes: None of the sugars are fermented; all of the media remain blue and unchanged.

Bacillus Shigæ: Dextrose and *galactose* are fermented with acid formation as shown by a reddening and solid coagulation of the medium. Mannite, maltose, lactose, saccharose and dextrin are not fermented, the media remaining blue and fluid. This is true of "Kruse," "New Haven" and "Flexner."

Bacillus "Y" (Hiss and Russell): *Dextrose, galactose* and *mannite* are fermented with acid production, as shown by reddening and coagulation of the media. The fermentation of mannite differentiates this organism from Bacillus Shigæ, as represented by the cultures "Kruse," "New Haven" and "Flexner." The maltose, lactose, saccharose and dextrin tubes remain fluid and blue.

Bacillus "48": From stool of typhoid fever in 1897. Same reaction as above with the exception that the mannite medium is not coagulated throughout the entire depth, but shows a blue fluid layer at the top. This organism, however, is actively motile and thus further distinguished from "Y."

Bacillus typhosus: Dextrose, galactose, mannite and *maltose* and *dextrin* are fermented with acid production, as shown by a reddening and solidification of the media. *Dextrin* tubes first show a change to purple, and later coagulate in the lower portion leaving for some time a blue fluid layer above. Lactose and saccharose media remain unchanged and blue. The fermentation of maltose and of the dextrin medium serve to differentiate typhoid cultures from our organism "Y" and from the culture "48."

Bacillus "48" deserves further mention. It was isolated by Hiss in 1897 from the feces of a New York hospital patient supposed to be suffering from typhoid fever, and was thought at first to be a true typhoid bacillus, but was subsequently looked upon as doubtful, as it did not form thready colonies in the typhoid plating medium and, although clouding the tube medium uniformly, without gas production, formed a thin pellicle at the surface of the medium. This is never the case with true typhoid cultures. It has been preserved in sealed tubes until a short time ago when it was re-examined and found to differ from typhoid bacilli in its action on maltose and dextrin. Although its sugar reactions correspond very closely to those of our bacillus "Y," it is, as above noted to be, readily distinguished from it by its motility.

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* Beef serum, one part; distilled water, three parts; is better as it is less opalescent.

Agglutinating Reactions.—Unfortunately we were not able to obtain a specimen of blood or serum from the patient from whose intestine our bacillus was isolated, so that a most important link in the chain of etiological evidence is lacking. A study of the agglutinating reactions of the bacillus have, however, been made with various normal and immune sera, and with the serum of an animal immunized with the bacillus itself. The following interesting, and it seems to us, very important results have been obtained.

Normal Human Blood.—The results of tests against supposedly normal human sera were as follows:

Serum A.—Adult man, in good health; no history of bad diarrheic or dysenteric attack. This serum did not agglutinate the bacillus in any dilution.

Serum B.—Placental blood. No history furnished. Positive reaction 1-20, two hours. 1-30, two hours was negative.

Serum C.—Adult man, in good health. Two years ago while in Porto Rico suffered from a prolonged attack of diarrhea, which was not, however, considered dysenteric in character. Positive reaction, 1-80, in two hours. Negative, 1-100, in four hours. This serum, on account of the previous diarrhea, probably should be excluded from the normal list.

Human Sera, Dysentery: *Serum A.*—From a soldier with chronic dysentery. Acute attack in the Philippines two years ago. Another attack subsequently in Porto Rico. Positive reaction with our bacillus, 1-20, one hour. "Flexner" did not react at 1-20. "Kruse," — 1-10, — 1-40; "New Haven," + 1-10, +1-20, — 1-40.

Serum B.—From a soldier with chronic dysentery. Sent to us from the military hospital in Washington. Acute attack of dysentery in the Philippines two years ago. Our organism reacted 1-40, one-half hour. "Flexner" gave no reaction. "Kruse" was positive 1-20; minus, 1-40, one and one-half hours. "New Haven" positive 1-20; negative, 1-40, one and one-half hours.

Normal Horse Serum— Bacillus "Y," +1-40, one-half hour; + — 1-80. "Kruse," + 1-20, + — 1-40.

Dysentery Horse Serum.—From a horse immunized against culture "New Haven." Sent to us by Professor Flexner:

Bacillus "Y," +1-400, + — 1-500, twenty hours.

"New Haven," +1-100, + — 1-200, twenty hours.

"Flexner," +1-40, —1-200, twenty hours.

Bacillus "48," —1-1, —1-50, twenty hours.

Bacillus typhosus, + — 1-20.

Normal Rabbit Serum.—Bacillus "Y," + — 1-2; — 1-10, 1-20, 1-100, two hours.

Typhoid Rabbit Serum.—Highly immunized against typhoid. Exact titration against typhoid originally 1-20,000.

Bacillus "Y," +1-500; +1-4,000.

"New Haven," —1-20.

Bacillus "48," —1-25 and 1-100, twenty hours.

"Y" Rabbit Serum.—This animal received several inoculations of boiled cultures of "Y." The serum agglutinated "Y" in dilutions as high as 1-500. "Kruse," "New Haven" and "Flexner" did not react in any dilution (—1-10; —1-500). Bacillus "48" also showed no agglutination. *Bacillus typhosus* reacted at 1-80; + — 1-100, in twenty hours.

Normal Beef Serum:

Bacillus "Y," +1-200; +1-320, four hours.

"Flexner," +1-10; — 1-20.

"New Haven," +1-10; — 1-20.

"Kruse," +1-10; — 1-20.

Bacillus typhosus, +1-40; +1-80, twenty hours.

The results of these serum tests are important and indicate to us, after a careful search of the literature of dysentery, that we are in all probability dealing with an organism not hitherto described. It is readily seen from our tests that "Y" agglutinates with dysentery serum from human infections and from immunized animals in most instances quite as well as, and in some better, than do bacilli fully identified in all respects with the bacillus of Shiga. The various dysentery-like bacilli described by other observers, although showing some agglutination in the presence of dysentery sera, have been agglutinated to a markedly less degree than true dysentery bacilli, and for this reason alone have in several instances been excluded from recognition as fully identical with Shiga's bacillus. This is true of the organism described by Kruse as the bacillus of pseudodysentery of the insane. The organisms placed in this class were, according to him, so far as he could determine, in all respects similar to his and Shiga's dysentery bacillus in cultural characters. They were differentiated by not agglutinating with true dysentery serum, but with the serum from the insane patients. The true bacillus of Shiga, on the other hand, did not agglutinate with these sera in the same dilutions. These pseudodysentery cultures were agglutinated in normal sera in 1-50, which is higher than that usually shown by the true dysentery bacillus. Kruse found that his true dysentery organism agglutinated in normal sera as high as 1-20, and exceptionally 1-50. In his later paper, however, he thinks this may have been due to previous infection.

Another point of interest is the high agglutination of our bacillus with sera from animals immunized against typhoid. Here "Y" shows a very close relationship to the bacillus of typhoid. This bond is strengthened by the fact that typhoid cultures also show fair agglutination in "Y" immune serum. Both Shiga's bacillus and typhoid call forth agglutinins which have an affinity for the receptors of our bacillus "Y." "Y" immune serum, on the other hand, contains some agglutinins active for typhoid bacilli, but none, so far

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+ — indicates a partial reaction.

as our experiments go, which affect Shiga's bacillus.

"Y" and typhoid bacilli, therefore, call forth some agglutinins in common or have receptors capable of anchoring certain agglutinins of each. "Y," it may be, anchors all of the agglutinins called forth by Shiga's bacillus and probably other agglutinins normally present in the serum tested. This is indicated by its higher agglutination in the dysentery horse serum than that shown by the dysentery cultures themselves. This is the case; or it has fewer receptors that have to be satisfied before agglutination takes place. The same phenomenon is probably illustrated by our organism and typhoid bacilli in normal beef serum. There are agglutinins present in the serum active for both typhoid and "Y." Our organism "Y" is, however, agglutinated in much higher dilutions than the typhoid bacillus, showing that there is much more "Y" agglutinating substance present, or that "Y" is agglutinated with fewer receptors satisfied than is the typhoid bacillus.

The action of beef serum is important, as it may be found to afford a practical means of differentiating true Shiga bacilli from organisms of the "Y" type. Shiga's bacillus, as above noted, does not agglutinate in beef serum to an appreciable degree.

These facts brought out in regard to the serum reactions of "Y," dysentery, and typhoid bacilli, have important practical bearings. Unless careful studies are made of all organisms resembling Shiga's bacillus, gross errors may occur in serum diagnoses based upon the use of such organisms in testing reactions; and errors may also occur in identifying such organisms themselves by simple tests against dysentery serum. This is illustrated by the fact that "Y" agglutinates better even than the true Shiga bacillus in dysentery serum, and unless true Shiga bacilli are tested against immune "Y" serum they may not be differentiated from each other. It is more than probable that organisms corresponding to "Y" have already been isolated and not recognized as distinct from Shiga's bacillus. This may then lead to the converse mistake of establishing the identity of a dysenteric or diarrheic attack with true dysentery by agglutinations obtained by the use of a bacillus differing from the supposed etiological organisms.

These remarks are not meant to convey the impression that "Y" itself is not or may not be found to be etiologically related to some form of dysenteric or diarrheic disease, but are intended to bring out the fallacy of relying solely upon serum reactions in identifying either disease or organism. It is fortunate, therefore, that the study of cultural characters has aided us in the recognition of differences in these organisms and may be of further service in the recognition and grouping of new organisms as they are discovered.

It seems to us in the face of our knowledge of the discrepancies in degree of agglutinability of such well-known organisms as typhoid bacilli, which not only show variations among the different cultures, but in the same species under practically non-determinable culture conditions, that we should hesitate before placing too much confidence in differences determined by serum reactions alone, but should endeavor in all cases by careful and extended study to establish their identity or dissimilarity by every cultural and biochemical test available.

Arguing from the analogy of our work on immune animal sera, an infection due to a bacillus of the "Y" species might, if tested against typhoid bacilli, give a reaction in a dilution considered diagnostic, and sera from both dysenteric and typhoid patients, when tested against "Y," would certainly give reactions in high dilutions. Conversely, "Y" might be identified either with typhoid or Shiga bacilli if dependence were placed on serum reactions alone in its recognition.

Pathogenicity.—Our bacillus is pathogenic for both rabbits and guinea-pigs, but not markedly so. No characteristic lesions have so far been noted. Some hyperemia of the small intestine is apparent. Rabbits may be readily accustomed to large doses of living cultures without showing a marked loss in weight.

As noted earlier in this paper, Lentz in a cultural study of a large number of true Shiga bacilli and other more or less closely allied organisms isolated from dysenteric patients, claims to have been able to separate by the use of a mannite litmus agar the cultures, which he designates as "Flexner I," "Flexner Manila" and "Strong," from the true bacillus of Shiga and Kruse. The results of his tests indicated that grown in this medium. Shiga's bacillus does not give rise to changes in the medium, with the exception of a decolorization of the medium in its lower layers, the medium remaining of the normal blue or deep purple in the upper section. In the media inoculated with the Flexner and Strong bacilli, the color changes to a distinct red, due to acid production.

We have endeavored to repeat Lentz's experiments. The medium used by him in his earlier experiments was made according to the formula given by Drigalski for his typhoid isolation medium, with the substitution of mannite for the lactose. In Lentz's article on Dysentery in Kolle and Wassermann's Handbuch der Pathogenen Mikro-organismen (p. 321) the method of preparation is somewhat simplified. This last method is the one followed by us.

At the present moment we are unable to say whether our culture "Flexner" is one of the organisms designated by Lentz as "Flexner I" or "Flexner Manila." The tests of our culture "Flexner" on Lentz's medium do not, however, agree with his published results.

[Note.—Since writing the above I have had the opportunity, through the kindness of Dr. Flexner, of examining the cultures "Flexner Manila (Harris)" and "Flexner Manila (Gray)" and Strong's Manila culture. These are the cultures examined by Martini and Lentz, and the culture "Flexner" examined by us is, according to our tests, not one of them. Both of Flexner's Manila cultures, as well as that of Strong, differ from the true Shiga bacillus in fermenting mannite, as shown by acid production. Strong's bacillus may be identical with our organism "Y," but has not been under observation long enough for us to speak positively. Flexner's Manila cultures as well as one of his Baltimore cultures (sent to me by Dr. W. H. Park) is further differentiated from Shiga's bacillus and from our Bacillus "Y" and Strong's culture by fermenting maltose. Saccharose is also fermented with acid production by Flexner's Manila cultures and by the culture "Baltimore." My tests also indicate that these bacilli will produce acid in the presence of dextrin. Their fermentation of saccharose and the absence of active motility separates them from *Bacillus typhosus.* Their fermentation of maltose, saccharose and dextrin is slower than their action on dextrose and mannite, and may not be apparent for some days. Control saccharose tubes inoculated with *Bacillus typhosus* show no change, so that this cannot be attributed to the presence of dextrose derived from the splitting of saccharose in the preparation of the medium. Control tubes of maltose and dextrin inoculated with Bacillus "Y" and Shiga's bacillus also remain blue and unchanged.

We have, then, apparently, three groups of organisms. One represented by the true Shiga bacillus, fermenting dextrose and some other monosaccharids; one by our organism "Y," fermenting dextrose (monosaccharids) and the alcohol mannite; and finally a group represented by the more active fermenters—Flexner's Manila cultures and the culture "Baltimore"—organisms which split dextrose, mannite, maltose, dextrin and saccharose with the production of acid, as indicated by the reddening and coagulation of the serum-water sugar media.

This study shows plainly the inadvisability of relying upon superficial characters or agglutination tests alone in the identification of an organism, or on the serum tests in the determination of the special character of a disease, and also lends support to our supposition that organisms differing from the true Shiga bacillus have been isolated and confounded with this organism.—*Hiss.*]

Flexner's bacillus gives identically the same reaction in Lentz's litmus mannite agar as the results obtained when "Kruse" and "New Haven" are tested. The culture medium of Lentz, which is used in tubes and inoculated by central puncture, in all three instances became slightly reddened below, but remained blue at the surface. The medium in Lentz's experiments with Flexner's bacillus reddened.

Our bacillus "Y" and the organism "48," as well as true typhoid bacilli when grown in the medium give rise to a reddening of the medium throughout its entire depth. These results were what we naturally expected from our knowledge of the metabolism of these organisms. "Kruse," "New Haven" and "Flexner" do not utilize mannite either in the presence or absence of oxygen, or give rise to acid from it. Bacillus "Y" and "48" and typhoid bacilli ferment mannite with rapid production of acid, and hence redden the entire medium. This was to be expected from their fermentation tube reactions and the results of our experiments with serum-water plus mannite.

An explanation of these discrepant results may, however, be found in the fact, which seems to have escaped the notice of both Drigalski and Lentz, that the medium to which they add sugars, such as mannite, lactose, etc., to be tested, is *not* glucose free. No mention is made of the removal of muscle sugar from the nutrient infusion used by them, nor is this recommended in the directions for preparing the medium. The presence of a fermentable substance, not mannite, in Lentz's medium, is clearly demonstrated by the reddening and possible subsequent clearing of the lower portion of the medium when tested with our cultures "Kruse," "New Haven" and "Flexner," which do not ferment mannite. That the medium remains blue at the top simply indicates that in the presence of oxygen the alkali production neutralized or exceeded the production of acid.

We have made up samples of the medium from sugar-free meat infusion and find that in tests of cultures "Kruse," "New Haven" and "Flexner" no reddening of any portion of the medium occurs. Furthermore, when the medium is used soon after heating, the usual absorbed oxygen being then absent, the growth is confined to the surface, or upper parts of the inoculation line, since these organisms do not grow anaerobically in the presence of mannite in otherwise sugar-free media. In tests of mannite fermenting organisms such as "Y," "48" and typhoid bacilli, the glucose-free mannite medium is found reddened throughout, and growth has taken place along the entire length of the inoculation puncture.

None of the results of Lentz's sugar tests, although they may be roughly indicative, can be scientifically reliable so long as the medium used by him contains this original sugar, and the justice of our criticism of his method is evident in the discrepancies noted by Lentz* himself between the action of colon bacilli on media made by him and the results obtained by Drigalski with colon bacilli. Furthermore, slight differences in the initial reaction of the medium (alkali content), which are unavoidable with their method of neutralization and alkalinization, would also determine differences in their color reactions.

Résumé.—To review briefly: We have in this paper described an organism from a case of fatal diarrhea in an infant. This organism agglutinates in high dilutions with the serum from dysentery patients and animals immunized with Shiga bacilli. Formerly this bacillus "Y" could not have been differentiated by valid culture tests from the bacillus of Shiga, and, the mannite test being unknown, might easily have been confounded with Shiga's organism unless its agglutinating reactions had been carefully studied in such a serum as that from typhoid immune animals, or from the normal beef, in neither of which the true Shiga bacillus, according to our tests, agglutinates in appreciable dilutions.

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* See foot note by Lentz; Zeitsch. f. Hyg., 1902, XLI, pp. 560, 561.

The bacillus described by us is also closely related to *Bacillus typhosus,* both in agglutinating reactions and in the usually observed cultural characters, but can be separated from it by the absence of motility and by its reactions in the maltose and dextrin media employed by us.

This bacillus apparently differs from all hitherto described dysentery-like or "pseudodysentery" bacilli, in its agglutination in high dilutions of dysentery serum, an agglutination in some instances more marked than that shown by the true Shiga bacillus.. A description of this organism, apart from its connection, which may or may not be etiological, with the case of diarrhea, has seemed to us important, since tests of its ability to agglutinate—too often alone relied upon—might lead to its being confounded with Shiga's bacillus. A subsequent use of such an organism for serum diagnosis might thus give rise not only to confusion in determining the "specific" character of a disease, but to untoward results in the application of serumtherapy.

Its etiological significance we have not been able to determine, but its close physiological connection with the dysentery bacillus on one side and the bacillus of typhoid fever on the other make it not improbable that further research will show it to be associated etiologically with certain diarrheic or dysenteric attacks.

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Efficiency of Agurin.—The number of diuretics which stand at the disposal of the physician is not a large one, so that the introduction of agurin was received with favor. This drug, which is a combination of sodium theobromate with sodium acetate, has been very carefully tested by A. Nusch (Münch. med Woch., Dec. 23, 1902) who finds that the best effects are seen in uncompensated cardiac disease where the edema generally disappears in a few days. Very good results are also seen in pleurisy with effusion, while in parenchymatous nephritis the drug is contraindicated, since it does not act upon diseased renal epithelium. In interstitial nephritis, however, an increased diuresis may follow. The usual dose is three grams per day.

POST-DIPHTHERITIC OCULAR PARALYSIS.[*]

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Among acute infectious diseases, diphtheria is the most common cause of paralysis of the ocular muscles. All the acute febrile diseases are accompanied by a post-latent stage, and in diphtheria this post-latent stage is characterized by the paralytic trouble so frequently met with after an acute attack of this affection.

Such paralysis is an essential part of the disease, due, in all probability, however, not to the disease itself, but to the presence in the system of certain resulting toxins. Some writers even assume that the paralysis should not be viewed as a sequel of diphtheria but rather as really a part and parcel of the disease.

If there is any affection which runs an indefinite course it is that of diphtheria, as one attack predisposes to another, differing in this respect from many other contagious diseases.

As a rule the paralysis first appears in the fauces, affecting deglutition and then successively involving the muscles of accommodation and those of the extremities. One of the main points to be depended upon is the fact that in diphtheritic paralysis only a comparatively small number of muscles are usually affected at the same time. Another point is the sphincter muscles are seldom or almost never involved in the paresis.

The ciliary muscles are more frequently involved as a sequence of diphtheria than any other portion of the muscular system, with the exception of the velum palati.

Donders was the first to discover the presence of paralysis of accommodation following diphtheria, when, in an epidemic of diphtheria in France, in 1860, he saw upward of thirty cases. Mention had already been made in a report by Fauré in 1857 of six cases, where paralysis of the palate, and of "weakness of sight," once too of strabismus. (Donders, p. 599.)

Bretonneau, Trousseau and Blanche have noted these post-diphtheritic paralyses, but attributed them to some disturbance of retinal function. Donders supposed the lesion to have been a hemorrhage in region of oculo-motor nerve centers, because in this way he could explain the "dulness in the head," slight attacks of vertigo, and the after-attacks of accompanied headaches. Paralysis of the pupil or *sphincter irides* is only an occasional accompaniment, yet Donders seems to have noted it more frequently than others. (Donders, p. 899.) Shelby[†]-Bush had observed one out of twenty-four cases of paralysis of accommodation following diphtheria.

In Graefe and Sämisch's Handbuch der gesammten Aguenheilkunde Foerster[‡] fails to dedescribe a single case.

Diphtheritic paralysis is generally bilateral, although Jefferson[§] reported one of unilateral paralysis of accommodation with mydriasis. The total hypermetropia existing after diphtheritic paralysis of accommodation, exceeds that that can be rendered manifest by any cycloplegiac after patient has recovered from the effects of the paralysis. This is accounted for by Jefferson in that the lens assumes a flatter curvature in prolonged paralysis of the ciliary muscles, than by a briefer paralysis induced by a cycloplegia.

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[*] Read before the Northwest Medical Society of Philadelphia, October 7, 1902.

[†] Archiv für Ophthalmologie, Bd. xvii., I. S. 265.

[‡] Bd. vii., S. 172.

[§] Medical Times and Gazette, 1873, Vol. XLVII, p. 89.

The paralysis of accommodation manifests itself in from two to six weeks after an attack of diphtheria and generally passes off in about the same time.

It may be assumed that recovery from an attack of diphtheritic paralysis of accommodation is more rapid in the young than in those more advanced in years.

The presence of paralysis of accommodation is observed when the patient becomes convalescent in the inability to see near objects acutely, as reading, etc., together with or without double vision. Diplopia is observed whenever one or more of the extrinsic muscles are affected.

When the external muscles are affected, it is generally of short duration, excepting when the two internal recti muscles are involved recovery seems more retarded. The external rectus muscle seems peculiarly liable to be affected. Remak* found paresis of external rectus in ten out of one hundred post-diphtheritic ocular lesions. The paralysis bears no relation to severity of attack of diphtheria, as the lesion has been observed after the most insignificant attack. As to the seat or cause of the lesion, Donders described the angina in diphtheria to be a general disease, and that the altered blood-crasis excited a secondary morbid process in the central organ, which became the cause of the paralysis. The theory most generally accepted is that of Völcker,† who places the lesion in the nerve endings in the affected muscles. If it were in the trunk of the oculomotor nerve or in the short roots of the ciliary ganglion, the pupillary reaction would be lost and the external ocular muscles paralyzed. Since eserine produces the physiological effect on the ciliary muscle the diphtheritic poison cannot affect this muscle.

Buhl and Oertel's observations agree upon the same hypothesis that the cause of diphtheritic "paralysis in general is that the nerves are pressed on and constricted by the connective tissue proliferation, and recover their functions when the action of the injurious agent has ceased."

Knies‡ asserts that all the post diphtheritic lesions cannot be accounted for by the hypothesis of hemorrhages or inflammation in the nerves or their terminations in the muscles. He claims that some toxin is produced after diphtheria which has a direct influence on the muscles of accommodation.

Therefore it is impossible to account for the generally active pupils, the frequency of paresis rather than paralysis, and the bilateral character of the lesions on any other theory than the peripheral one.

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* Centralblatt für praktische Augenheilkunde, 1886, S. 161.

† Norris and Oliver's System of Diseases of the Eye, Vol. IV, p. 702.

‡ Transactions of the Ophthalmological Society of the United Kingdom, Vol. VI, p. 386.

POST-DIPHTHERITIC PARALYSIS AFFECTING THE GENERAL NERVOUS SYSTEM.*†

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CONTRARY to the view held by some, the frequency of paralysis is in direct proportion, I believe, to the severity of the general infection, although a severe form of palsy may follow a mild type of diphtheritic intoxication. The location of the membrane is of considerable importance as an etiological factor, diphtheria of the posterior nares especially predisposing to both local and widespread palsy. That age is an important factor is borne out by statistics. Gowers believes it to be relatively more frequent in adult life than in childhood. In statistics of other writers however, early childhood, from five to six years, seems to furnish the greater number of cases. The proportion of cases of diphtheria followed by paralysis is variously estimated from 10 to 30 per cent. In 1,316 cases of the disease reported by Myers, 275, or about 21 per cent., were followed by palsy.

Pathology.—Many of the older writers and some of to-day have regarded the palsy as a peripheral one only, due to polyneuritis. As early as 1863, Charcot and Vulpian published a paper as the result of their investigation, from which they drew conclusions similar to those generally accepted to-day. Pathological changes more or less constant have been found to exist not only in the peripheral nerves, but also in the nerve trunks and roots, in ganglia, and in the spinal cord and brain and their coverings. The muscles, too, share in degenerative changes secondary to and independent of nerve lesions, especially observed in the myocardium. There seems to be a unanimity of opinion as to the direct cause of the lesion, *i.e.*, a toxin elaborated within the body by the diphtheria bacilli or "by the body itself acting under the stimulus of these micro-organisms or their products" (Thomas). All agree likewise that the blood stream is the great carrier of the toxic substance although the selective power exercised in some instances, as when the palate alone is affected, accommodation paralyzed, etc., is hard to explain, unless proximity of the special structures involved renders them more vulnerable. The case of Kussmaul, which developed diphtheria of the navel soon after birth followed by paralysis of the abdominal muscles, in a measure confirms the view that proximity to the source of infection may predispose the terminal nerve endings to invasion by the toxin.

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* Read before the Northwest Medical Society of Philadelphia, October 7, 1902.

† For a complete bibliography, the reader is refered to Nothnagel's System of Practical Medicine, Vol. 3, English Edition. "Diphtheria," by Wm. P. Northrup, M.D.

Many of the earlier writers and some of to-day contend that paralysis is due to a peripheral nerve change of a parenchymatous nature and that little or no change is found in the cord and brain. Others maintain that the cells in the anterior horns of the cord are the primary seat of lesion, the peripheral nerve change being only secondary to the spinal lesions. A more conservative view and the one generally accepted, is that the entire neuron, either motor or sensory, may be the seat of pathological changes, the peripheral neuritis usually predominating and often existing without demonstrable change in the cord.

From a pathological study in 1896, Monicatide divided diphtheretic paralysis into four groups: "Those showing (1) purely muscular change without nerve involvment; (2) polyneuritis; (3) lesions of the spinal cord, which were either localized in the gray matter, leading to atrophy of muscles, or involved the white matter of the cord, in a similar way to that seen in locomotor ataxia or multiple sclerosis, and (4) cerebral hemorrhage chiefly due to circulatory change." This classification is accepted by many of to-day. To be scientifically correct, however, the fourth group, *i.e.,* the cerebral palsies, should not be classed as a palsy due to a diphtheritic toxin, inasmuch as it is accidental. Strictly speaking the term diphtheritic palsy should be applied to those palsies only which are due to direct action of the diphtheritic toxin.

Symptoms.—The blood stream being the main carrier of the toxins which gives rise to nerve and muscle degeneration, the entire nervous system may share to some extent in paralysis, although single nerves are frequently picked out by the poison as a seat of greatest intensity of action or as in some instances as the only seat of disease. During the second or third week of diphtheria, when convalescence is thoroughly established, instead of a gradual return to the normal, there is a slowly oncoming but progressive loss of strength, accompanied by wasting of the muscles of the extremities and, if the trunk is involved, of the thoracic muscles. In other cases the parents notice that after the child is up and around, to the regurgitation of liquids through the nose and the nasal twang of the voice, both of which began when the child was yet in bed, there is added a gradually increasing difficulty for the child to climb the stairs or even to walk. The gait becomes waddling and weak, causing the child to fall over the slightest obstruction in the way; at times too there is a decided stagger, really an ataxia. The hands and arms become weak and paralytic.

In a great number of hospital cases, seen for the first time by the physician, the paralysis is usually well advanced, accompanied by marked general emaciation. In the severer forms of paralysis the child soon becomes bedridden with inability perhaps to turn itself over in bed or to even raise the head from the pillow. The bladder and rectum sphincters may become paralyzed causing involuntary urination or constant dribbling and obstinate constipation. To paralysis of the extremities may be added paralysis of the respiratory muscles or of the heart, when the case becomes one of great gravity. The average case, however, does not lose power so completely and after from four to eight weeks of rational treatment, gradually recovers. Soon after the onset of the palsy, the knee-jerks are found to be diminished or lost, not only in the severer forms, when absence is the rule, but even in milder forms of paralysis. Its absence has been noted in at least 33 per cent. of all cases of diphtheria with or without paralysis in some form. Its absence, however, in mild cases is not observed until late in the disease as compared to severer forms; but its absence always indicates some change in the peripheral neuron. As a rule little if any pain is experienced by the patient and the nerve trunks are not painful when pressed upon. All degrees of severity are met with from a mild general paresis with slight emaciation, to the most complete palsy of all the muscles of the body associated with cardiac and respiratory paralysis. Symptoms of unusual gravity are paralysis of heart and respiratory muscles and of the muscles of the neck.

Instead of this general widespread palsy certain nerves may become the seat of great intensity of toxemia giving rise to special distinct forms of local paralysis. Four of these local palsies are of special interest as they occur alone or are part of a general palsy. Named in order of frequency they are palatal, ocular, cardiac and diaphragmatic. The ocular and palatal types rarely are a menace to life but deserve study in special papers. In 275 cases of diphtheritic paralysis, collected by Myers (*London Lancet,* Vol. 2, 1900), 110 were of the palate, 69 were cardiac and 21 were diaphragmatic.

The direct cause of cardiac failure in diphtheria has been much under discussion. The myocardial changes, however, are now thought to be secondary at least to functional disturbances of the vagi and probably due to organic changes in the nerve structure. Children from two to nine years are the most frequent sufferers; after the ninth year there seems to be a rapid decrease in the number of cases affected. The onset as a rule is early, about the seventh day of the disease, although the heart has been known to be affected as early as the second day and as late as the thirty-sixth.

The symptoms most characteristic of its onset, are irregularity of heart action, bradycardia, tachycardia, a lowering of the temperature, (frequently subnormal) and vomiting. Of these, bradycardia, vomiting and subnormal temperature have seemed to me to be most constant and are present early, especially in fatal cases. To these may be added gallop rhythm, dilatation of the heart, a short first sound with systolic murmur at apex, blueness of the lips and other mucous membranes and a coldness of the extremities, all indicating a profound cardiac disturbance. Extreme restlessness I have noticed quite early and when accompanied by any of the above symptoms is quite characteristic. In 80 deaths collected by Myers 64, or 80 per cent., were due to cardiac paralysis. The duration of fatal cases is from two to fourteen days.

Diaphragmatic palsy may occur alone or be a part of a general paralysis. In the 275 cases of Myers, 21 were of this type; ten of the number recovered and eleven died, making 13.7 per cent. of the total deaths due to paralysis. Children between two and six years are the most frequent sufferers. The symptoms are dyspnea, retraction of upper abdomen during inspiration, weakness of voice and a tendency to the accumulation of mucus in the trachea and bronchial tubes. When the external respiratory muscles are also affected, respiration is almost impossible unless assisted.

The duration of fatal cases is from six to seven days. When the phrenic nerves alone are affected, the prognosis as a rule is more hopeful, since the external respiratory muscles are sufficient to keep up respiration until the phrenic nerve injury recovers. When, however, the weakness is very marked, tracheal obstruction by accumulation of mucus, or a secondary pneumonia may terminate the case.

Illustrative of this form of palsy is the case of Willie C., aged four years, who developed severe local symptoms of diphtheria and profound constitutional disturbance. He made a good, although tedious, recovery and at the time of my last visit, convalescence seemed to be thoroughly established. About three weeks later, in the sixth week of the sickness, I was sent for and found the following conditions: For about a week his mother noticed that the child was listless and refused to play but further than that noticed nothing unusual. Twenty-four hours before I saw him he seemed to have difficult breathing. Dyspnea gradually became worse, only possible with the greatest exertion, the child was semiconscious, breathing was shallow but noisy, much mucus having accumulated in the throat. With each inspiration the upper abdominal wall was retracted, the chest muscles were wasted in the extreme, the skin was ashy in hue and the lips blue. Death occurred a few moments after I arrived. Diagnosis, diphtheritic palsy of external and internal respiratory muscles.

Occasionally after an attack of diphtheria, individual muscles or groups of muscles, supplied by a single nerve or nerve trunk, have become paralyzed without general involvement. As a rule such localized palsies are followed by a more or less permanent injury to the part. Instances of this kind on record are, paralysis of the masseters, of the trapezii and of brachial monoplegia, a case of which was exhibited by the writer before the Philadelphia Pediatric Society last June. These paralyses are due usually to acute nuclear degeneration or to small capillary hemorrhages into the spinal cord.

Briefly, the history of the case of brachial monoplegia referred to, and which has never been published, is as follows: Robert B., aged two years, had a moderately severe attack of diphtheria, one sister suffering from it at the same time. Four thousand units of antitoxin were administered 36 hours after onset and he made a good recovery in about two weeks. At the end of the third week the mother noticed that he used the right arm but little and that it gradually became quite helpless and wasting became apparent. At no time during his illness had he had difficulty in swallowing either liquids or solids. His voice was perfectly normal and he gave no evidences of weakness in other parts of the body. He enjoyed good health up to the time of his attack of diphtheria. April 2, when he was admitted to my clinic at St. Christopher's Hospital, his condition was as follows: He was plump and hearty in appearance, quite a muscular little fellow with rosy cheeks and pink mucous membranes. He was perfectly normal in his development and his trouble is confined to the right arm and hand, which hangs limply by his side and is rarely used. The muscles of the arm, forearm and hand are wasted; the wasting being more marked in the hand and forearm. The dorsal interossei are all wasted, the first most markedly so and the thenar and hypothenar eminences are flabby and flattened. At rest the proximal phalangeal joints are extended and the distal ones are flexed. There is unilateral wrist drop, supination is weak and the grip is entirely absent. Flexion at the elbow is possible but not when resisted and elevation of the shoulder is also feebly accomplished. The knee-jerks are erratic, never absent but usually exaggerated, not spastic. The biceps tendon jerks are not obtainable. In other respects examination revealed nothing abnormal. Reactions to the faradic and galvanic currents were slightly altered quantitatively. After a month's massage, the condition improved very much. The arm was useful, wasting was confined mostly to the small muscles of the hand and it became possible for the child to grasp and hold objects in his right hand. At this time recovery is complete in the upper arm and forearm, but the wasting in the hand persists, the thumb being in the position of abduction, and the distal phalangeal joints are flexed.

The diagnosis of post-diphtheritic paralysis due to disease of the cells in the anterior horns of the cord is based on the following points: It occurred at the time usual for the diphtheric toxin to manifest itself on the nervous system, the deep reflexes were absent only in the arms, its onset was more gradual than a polyneuritis, wasting was rapid and sharply localized, recovery under treatment was prompt except in the hand in which marked wasting persists. Injury, rickets, and cerebral palsy are easily excluded.

Finally there is a form of paralysis occasionally met with after diphtheria, as also after other infectious diseases, in which the brain alone is involved—a hemiplegia, not unlike the hemiplegia which occurs in the adult. The pathological lesion is a thrombosis, an embolism or a ruptured blood vessel, within the brain, usually in the internal capsule. The symptoms and after history differ in no respect from hemiplegia of adult life with which we are familiar.

The following case is typically illustrative of this form of palsy: Horace B., five years of age, had whooping cough and measles when two and a half years old, but otherwise was well until January, 1902, when he had an attack of diphtheria in which there was marked glandular involvement. The infection was severe and persisted longer than the same disease in his sister, who was similarly afflicted. On the eleventh day of the disease he suddenly became unconscious and had a convulsive seizure, consciousness returning only after twenty hours. After regaining consciousness he understood what was said to him, but could not talk, could not use right arm and leg, and his face was drawn to the left. In three weeks he could say mamma and words have been slowly returning. He was able to walk some after ten weeks. His condition at present is as follows: He is of average size and well developed. He has a semi-flaccid palsy of right arm and leg and walks with a typical hemiplegic gait. All reflexes are much increased, but ankle clonus is not present. Passively the leg and arm can be moved at will without any appreciable resistance. At rest the face is straight, but during strong emotion it is drawn strongly to the right. Tongue protrudes straight. There is some motor aphasia, but the patient now talks fairly well. The heart sounds are negative and the kidneys show no signs of disease. During sleep athetosis is present. About six months after the onset of the palsy the child had another convulsion and several have followed since. The diagnosis is clearly hemiplegia of cerebral origin, diphtheria being the direct exciting cause. The pathological lesion, however, in this case is not a degeneration of nerve tissue primarily, but a vascular lesion, most probably a ruptured blood-vessel.

You will observe that this form of palsy differs materially in its pathology from the other forms cited and should not, therefore, be regarded as a diphtheritic paralysis. It should be regarded as purely accidental. Influenza, typhoid fever, scarlet fever and measles may in a similar manner be followed by a like condition. In matter of time, too, the palsy develops as a rule at the height of the infection rather than during convalescence.

As a sequence to multiple capillary hemorrhages occasionally within the cord and brain, symptoms of multiple sclerosis have been served in a few cases and at necropsy, microscopical changes similar to those of true multiple sclerosis have been observed.

Diagnosis.—Given the history of a preceding attack of diphtheria, diagnosis of the palsy offers little difficulty. Without this history, however, it may become difficult to determine the cause of the paralysis. The disease with which it is most apt to be confounded is acute anterior poliomyelitis. In severe or widespread destruction of the polar cells in the latter disease, the distribution of the palsy may be similar to diphtheritic paralysis. The onset, however, is more sudden and usually preceded by fever. Wasting also in the spinal palsy is apt to be localized rather than general, and certain groups of muscles, as for instance the extensors of arm and anterior tibial group in the leg, are apt to be the seat of wasting. In diphtheritic paralysis the wasting is general except in those patients in whom small areas in the cord are the seat of disease, when the previous history will help to decide.

From a pseudo-rachitic palsy it may be distinguished by the absence of evidences of rickets and the usual paraplegic type of a rachitic palsy.

The question as to which part of the neuron is diseased probably offers greater difficulty than the cause of the palsy. Lesions of the cells in the anterior horns as a rule are small so that the palsy is limited to a single group of muscles or even to a single muscle and the damage is more or less permanent. When the peripheral nerves are affected the distribution of the palsy is usually general and the paralyzed parts tend to recover rather rapidly and completely.

The cerebral type of palsy is distinguished by the fact that it usually is preceded by a convulsion, the palsy is hemiplegic, spastic with increased reflexes and may or may not be accompanied by asphasia. It usually occurs during the height of the febrile attack.

Prognosis.—The prognosis in general is good. Even severe general palsy tends to recover under appropriate treatment, when not complicated by cardiac or diaphragmatic paralysis. Of the 275 cases reported by Myers, 80, or about 29 per cent., died. Sixty-four of the 80 deaths were due to cardiac failure and 11 to diaphragmatic paralysis, leaving but five due to a general paralysis. When cardiac failure develops either alone or associated with a general palsy, death is almost invariably the rule. The same may be said of respiratory paralysis when both diaphragm and external respiratory muscles are involved. Lesions of ganglia and spinal cord are followed by symptoms more or less permanent, although the patient's life is rarely in danger. As in adult life, the prognosis of cerebral hemiplegia is uncertain, depending upon the location and extent of the lesion Complete recovery, however, rarely obtains. In any of the above forms of paralysis, if recovery is not complete, contractures may take place, which in turn may cause organic shortening and permanent contraction of certain muscles.

Treatment.—Treatment of diphtheritic paralysis is of unusual interest. Fortunately we have at our disposal the means of prevention in many cases or at least of modifying the severity of the palsy. Rainy conducted a series of experiments upon guinea-pigs with diphtheritic toxin and antitoxin. By these experiments he found that by injecting a large dose of antitoxin into the animal an injection of the diphtheritic toxin in excessive doses was not followed by paralysis, although in the control experiment in which the antitoxin was not used, the animal invariably developed paralysis. Not to go into detail, his conclusions in substance were that in the guinea-pig at least antitoxin was an absolute protection against paralysis when administered in sufficiently large doses soon after the introduction of the toxin.

These experiments and the experience and statistics of others furnish us with undoubted proof of the assertion that much may be done to prevent and mitigate this menace to childhood. Aside from the use of antitoxin as a prophylactic against paralysis, it is doubtful whether we have not been too slow in grasping this means offered us for combating the primary disease early in its course.

As the early administration is of paramount importance for the successful recovery of the patient from diphtheria, so it is of greatest importance to eradicate from the system, or probably rather to prevent the formation within the system of toxins which act so destructively upon the nervous system. This confidence in the serum as a means of preventing paralysis, has been expressed by most writers of to-day, and the view seems to be especially warranted by facts. The extensive use of the serum has, however, lowered the mortality rate of diphtheria very considerably without at the same time diminishing the proportion of cases which are followed by paralysis and this may seem to detract from our argument. The explanation, however, is simple. Our mortality rates are materially lowered, from which we can conclude that many severe cases are restored to health, perhaps only after protracted illness and profound infection. And it is not unreasonable to conclude that these severe cases restored to health, which under former methods of treatment would probably die, are more frequently followed by paralysis than the mild cases in which the toxin has been eradicated very early.

A second means of prevention and one which ordinarily should be mentioned first, but which I prefer to place second to serum, in order to emphasize the latter, is absolute rest. Of the more serious forms of paralysis, the heart and diaphragm suffer out of proportion to the rest of the body and the reason is apparent. The muscular system in general is placed at rest at least during the acute stage of the primary disease, whereas the heart and diaphragm are in a constant state of activity and in fact are doing a greater amount of work than in health. Parts functionally at rest are better prepared to withstand the action of toxins, especially when their nutrition is directly affected by the poison.

Absolute rest is undoubtedly imperative, not only during the acute stage of diphtheria, but for some days after the external evidences of the disease have disappeared. Since the introduction of the serum this precaution is especially important. The duration of the acute febrile attack has been shortened to four or five days in the majority of instances, in contrast to the former average duration of fifteen days, and the tendency to accede to the will of patients and parents in allowing patients up too soon, I believe to be responsible for a not inconsiderable number of cases of paralysis.

What is true of rest as a prophylactic measure in the acute stage of the disease is doubly true of it as a curative agent after paralysis has made its appearance. As a preventive measure it ranks equally with serum, but as a curative agent it easily takes first place in our armamentarium, not only in severe heart cases, but also in mild cases of paresis. The patient should be placed absolutely at rest in bed and be given a nutritious diet. In a majority of cases improvement will follow these measures alone. Of great assistance in hastening recovery are massage and galvanism.

Among the drugs of value to be administered internally, iron and strychnine in liberal doses are probably the most satisfactory.

In severe cardiac paralysis, with bradycardia, vomiting and subnormal temperature, little can be done but support the heart by hypodermics of strychnine and supply heat to the body. Cardiac stimulants are contraindicated. Stimulation of an overworked, degenerated heart muscle will accomplish nothing but harm.

In respiratory paralysis, artificial respiration has been known to save life.

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POST-DIPHTHERITIC PARALYSIS AFFECTING THE EAR AND THROAT.*

BY DR. CARLE LEE FELT,

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THERE are three factors which may be considered as the direct cause of post-diphtheritic paralysis. These are: The bacilli, their poisonous product, the toxin, and a by-product—probably making no attack upon the general system, but limiting its action to nerve tissue—which is called the "toxone." This last cause is recognized by Mr. Dundas Grant[1] as possibly fully explaining the rather frequent occurrence of post-diphtheritic paralysis in mild diphtheria cases treated by antitoxin. The toxin is most generally accepted as the cause. In a few cases, however, there seems to be clear evidence that the bacilli hold that relation.

The pathological picture may be varied. A degeneration of the muscle fiber has been produced in experiments by Mollard and Regaud[2] by the injection of toxin. Instead of this the dominant lesion may be a parenchymatous degeneration of the nerve, or the central nervous system may be primarily diseased. Each case will fall then under one of these three heads: (1) Muscular degeneration; (2) localized neuritis and degeneration; (3) central nerve destruction or degeneration.

The most frequent site of the paralysis is the pharynx. Myers asserts that 40 per cent. of the post-diphtheritic palsies are confined to the palate and that in 12 per cent. the palate and eye muscles are affected. The larynx may be the only part involved or it may be in conjunction with other parts, near or distant. The muscles of mastication are very rarely implicated. Grant[3] reports a case of post-diphtheritic paralysis of the external pterygoids and other muscles of mastication which lasted fourteen months, with no impairment of taste, hearing or vision, but at the outset with a disturbance of speech and regurgitation through the nose when drinking. The sense of taste and smell are also very rarely impaired.

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*Read before the Northwest Medical Society of Philadelphia, October 7, 1902.

The organ of hearing may suffer and deafness result. This must be extremely rare, for according to Gowers hearing is never impaired. I have been able to find two cases of deafness resulting from diphtheria, both bilateral. J. C. Wilson[4] reported one in 1897, occurring in a woman of thirty-three years, which persisted seven months later. H. H. Tooth[5] reported the other case in 1893, which I quote in abridged form: "Boy of five. Membrane on tonsil and in nose. Urine albuminous. One month after beginning of attack became suddenly deaf and giddy, with palate paralyzed and knee-jerks absent. In three weeks palate recovered and patient began to hear loud shouts. Four days later could hear watch one inch from right ear, but not in the left. Perosseous deafness was absolute and walking with the eyes shut impossible. Three weeks later hearing in right ear normal and the watch at six inches in the left, and in yet another three days tympanic and perosseous hearing were normal. Knee-jerks absent and he tended to fall on walking down a line. Eustachian obstruction would not account for total deafness, which occurred after all diphtheritic inflammation had vanished. Dr. Tooth's conclusion was that the auditory nerve or center (he favored the latter) had been implicated in the same way as in ordinary diphtheritic paralysis.

The location of the membrane has little if anything to do with determining the subsequent distribution of nerve or muscle degeneration. Diphtheria of the nares with very little constitutional disturbance has been followed by a remote paralysis. On the other hand a unilateral paralysis of the palatal muscles may be limited to the part immediately covered by the pseudo-membrane, and in such a case it is fair to infer that the pathological condition is a myositis rather than a nerve change.

The time of onset has been given by Woodhead,[6] based on a study of 7,832 cases of diphtheria—1,362 of post-diphtheria paralysis—as from the fifth to the fifty-fifth day of the disease for the palate, fourth to the seventeenth for the ocular-motor muscles, the heart usually from the fifth to tenth day, and other parts—primary paralyses—from the tenth to the fourteenth.

The duration of these palsies may be from a few days to weeks or months, and rarely, may never be recovered from. At present I have under my care a child of twelve with a paralysis affecting the larynx, of nearly a year's standing, during which time no treatment has been given. Wilson's case of bilateral deafness persisted seven months after the attack of diphtheria. On the other hand, in Tooth's patient with bilateral deafness, the hearing was perfectly restored in about seven weeks.

The restoration of function undoubtedly depends first upon the nature and extent of damage done, and secondly, when the damage is reparable, upon the treatment and care of the case.

That there may be a mortality record in paralyses of this region is evidenced by the death of a man whose symptoms were slight impairment of tactile sensation, regurgitation of food through the nose, and unilateral paralysis of the palate. While drinking tea he began to cough. This ceased in a few minutes and he became distressed in breathing, simulating closely an attack of asthma. At no time was there evidence of laryngeal obstruction. He died in less than ten minutes. At the necropsy one and a half ounces of tea was found in the bronchial tubes. Hale White,[7] who reports this case, gives the cause of death as "spasm of the bronchial tubes."

The treatment of post-diphtheritic paralyses may be considered as preventive and curative.

It is now generally conceded, in spite of seeming testimony to the contrary, that antitoxin prevents and never causes paralysis. The greater number of profoundly poisoned patients who have recovered through the use of this serum, has added to the number of candidates for paralysis by saving their lives after the toxin has started nerve and muscle degeneration. Experiments on the lower animals have proven irrefutably that when the antitoxin follows close upon the introduction of the toxin and in a sufficiently large dosage, the chemic neutralization eliminates the opportunity for action upon nerve or muscle cells. If the injection of the antidote is delayed, the toxin has attacked the cells of the organism and only that part is neutralized which is free in the system.

Sir Thos. Barlow has recently spoken of antitoxin as "a fundamental remedy of enormous potency," and it has added the credit for preventing paralysis, which many denied it for a long time, to its reputation for saving life. But here even more emphasis upon the time and dosage should be laid than when it is given to save life. The ideal way to use antitoxin is to inject it at the time the disease is acquired and in sufficient amount to completely neutralize the toxin. The nearer we come to this ideal the more lives we will save and the fewer post-diphtheritic paralyses we will see. We must bear in mind the possibility that streptococcic infection so frequently found with diphtheria may cause paralysis—as other infectious diseases, such as influenza and typhoid fever, rarely do—and would not be prevented by even the early injection of diphtheria antitoxin.

The local use of antiseptics I do not believe is needed with this better treatment at hand. Rest in bed, nutritious and easily assimilable diet, the perfect action of the skin, kidneys and bowels,—

all tend to lessen the severity of the paralysis. They are certainly fundamental principles of the treatment when paralysis has occurred. Strychnine should be administered throughout the course of the disease, and is the most useful drug at our command to restore impaired function. Electricity, tonic baths and general massage, by the general toning up of the whole body, are valuable adjuncts.

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LABORATORY AIDS IN THE DIAGNOSIS OF TYPHOID FEVER.*

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LABORATORY examinations are of aid to the clinician in many cases of typhoid in which the clinical symptoms leave some degree of doubt as to the diagnosis. There are three purposes which the corresponding laboratory tests have in view: (1) the detection of characteristic morbid products of the disease; (2) the isolation and identification of the infecting organism; (3) the detection of certain cell products, the agglutinins, or one of the constituents, the presence of which is induced by the infecting organism.

The detection of morbid products more or less characteristic of typhoid is practically limited to the test for the unidentified substance which gives the diazo reaction of Ehrlich. Its value as an aid in diagnosis is variously estimated by different observers. That given it in the bacteriological laboratories of the New York Health Department is perhaps the most favorable to the test of any opinion of which I know. Their circular states: "The diazo reaction is present in over 90 per cent. of all cases of typhoid fever, appearing from the third to the sixth day, thus antedating the appearance of the Widal reaction in the blood. The reaction is very occasionally present in certain other conditions: these are severe scarlet fever and measles, acute miliary tuberculosis and general carcinosis. If these be eliminated, the reaction almost certainly indicates the existence of typhoid infection." This statement is not based on the results of the public use of the test, so that it is fair to presume that it is more or less tentative.

As an example of a less favorable opinion, I may mention a recent statement of Syers, based on a limited number of observations, that the test is of very little value. My own experience with its routine use, not in selected cases, is that its occurrence is distinctly less frequent than in 90 per cent. of typhoids, particularly so if we limit the observations to the period from the third to the sixth day. Johnson recently reports a positive reaction in 80.5 per cent. of 728 cases examined at all periods of the disease, obtaining the reaction as well in 46 per cent. of 309 cases of pulmonary tuberculosis, 18.9 per cent. of 90 cases of pneumonia, 26.2 per cent. of 42 cases of malaria and 23.9 per cent. of 46 cases of erysipelas. Other observers report the diazo reaction positive in cases of paratyphoid infection.

It is probable that the various conclusions of different observers regarding the value of the Ehrlich test are to some extent explained by the different standards adopted, as to what constitutes a positive reaction. In connection with the technic I may mention, too, that the urine should be tested before the addition of any preservative. On the whole, it seems apparent that the test has considerable value, but that quite a number of other conditions of disease must be excluded and that its failure to appear does not exclude the possibility of typhoid infection. It is without doubt well worth observing, but is not to be given greater weight than any other single symptom which is not pathognomonic and which may be wanting altogether.

The isolation of the infecting organism is of clinical value only when it can be expeditiously accomplished. The use of special media directed to this end enables the experienced observer to identify the organism with sufficient accuracy in many cases in 48 to 72 hours. The materials examined are the rose spots, the blood, the feces and the urine.

The examination of the rose spots may be of value, but as a routine procedure has been found open to the following objections (Krause): (1) The eruption does not appear in all cases or does not appear early enough to yield the information desired; (2) that it is not possible to isolate the organism from every spot; (3) that it is not always possible to distinguish the spots from eruptions not due to the illness in question.

To this I may add the inconvenience of taking the specimen in private practice. This same objection applies to the isolation of the bacillus from the blood. It is only occasionally, and usually in hospital cases, that it is expedient to practise puncture of the spleen or the removal of sufficient blood at any point for the inoculation of cultures. Besides this is the failure to obtain the organism from the blood in a considerable number of cases. Failure to find the organism applies to examinations of the feces and urine for typhoid bacilli and for this reason leaves much to be desired in many cases, but here the absence of inconvenience in obtaining the specimens and the absence of necessity for the laboratory specialist to visit the case renders the procedure worthy of more general application than it at present receives. When the bacteriological diagnosis is positive it is pathognomonic, but there are many cases in which the organism cannot be identified at a time to assist in the diagnosis.

We are all agreed, I think, that the value of agglutination reactions by the serum is now demonstrated beyond question. Misleading results have come from faulty laboratory technic, but with our better acquaintance with these reactions, faults in technic should be eliminated. A positive Widal reaction in the hands of a competent observer must now be given great weight in establishing the diagnosis of typhoid, certainly as much as other symptoms of first importance.

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* Read at the Symposium on Typhoid Fever, before the Section on General Medicine of the New York Academy of Medicine, October 21, 1902.

It is in the absence of a positive Widal that clinicians now find the greatest defect in this laboratory aid. The reaction frequently appears by the sixth day, usually by the eighth, but in exceptional cases not till the fourth or even the fifth week of the disease. The absence of other blood findings will assist in excluding other causes of fever and will indicate the advisability of repeating the Widal test, but it is well to remember also that the presence of other causes of fever does not exclude the possibility of typhoid which may manifest itself by a late Widal.

Studies of the bacteriology of cases with typhoidal symptoms, which do not give the Widal test, have shown that the infecting agent in these cases may differ culturally from the *Bacillus typhosus*, resembling more or less the colon bacillus. These intermediates have been called paratyphoids. Buxton recognizes two species of this group: (1) a distinct species culturally unlike the paracolons; (2) a distinct species culturally resembling the paracolons. The clinical pathologist has resource, therefore, to at least two additional agglutination tests in negative Widal cases, namely, the serum reactions with each of the species distinguished by Buxton. It must be remembered that it is not to be expected that this will lead to an early diagnosis in those cases of infection with *Bacillus typhosus* in which there is a late appearance of the Widal reaction, but that it will render a diagnosis possible in those typhoid-like cases with a negative Widal which are now known to be induced by infection with the paratyphoids. As recently emphasized by Coleman, the clinical natures of these two infections, namely, *Bacillus typhosus* and paratyphoid, are identical; since, too, the sera from cases of infection with these closely related bacteria tend to interact in low dilution, the reaction should be obtained in dilution of at least 1 to 40 in order to prevent confusion.

In conclusion, while the laboratory does not offer any one aid in diagnosis that is certain at all times in all cases, it does materially aid the clinician by the means mentioned, at times strengthening an early suspicion in cases that later present the classical symptoms and in some instances enabling him to identify atypical cases that without its aid would escape recognition.

I cannot close this enumeration of laboratory aids without calling attention to the instances where the laboratory is of service in establishing the diagnosis of some other conditions of disease where typhoid is suspected. Thus the recognition of the parasites of malaria; of the high polynuclear leucocytosis without eosinophiles and with increased fibrin formation and greatly diminished urinary chlorides of pneumonia; of the infecting organism of tuberculosis; of the relative lymphocytosis and marked protoplasmic degeneration of the red-blood cells in some forms of intoxication, the recognition of these or other findings are illustrations of the point in question.

Finally, I call attention to the subject under discussion and emphasize again that in the majority of instances the laboratory aids the clinician, leaving the final diagnosis for the judgment that takes into consideration both the clinical picture and the laboratory findings.

THE INFLUENCE OF SODIUM CHLORIDE UPON GASTRIC SECRETION.*

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No sooner were the modern theories of electrolytic dissociation and osmotic pressure accepted by physical chemists than their applications to physiology were recognized and enthusiastically studied. Thus Loeb[1] examined the action of certain electrolytes upon the frog's muscle. Bugarszky and Tangyl[2] determined the concentration of the dissociated substances in blood serum and the relation between the electrolytes and non-electrolytes contained in it. Dreser[3] calculated the work done by the kidneys in secreting urine. Other investigations along similar lines were carried out by Hamburger,[4] Hedin,[5] Heidenhain,[6] von Korányi[7] and von Limbeck.[8]

Following these came Koeppe's[9] hypothesis regarding the formation of hydrochloric acid in the stomach. His theory assumes a breaking down of H_2O into H and OH, the H cations uniting with the Cl anions of the dissociated NaCl thus forming HCl, while the Na cations of the dissociated NaCl and the OH anions of the dissociated H_2O on account of the osmotic peculiarities of the stomach membranes pass out to form NaOH and thus contribute one of the alkaline components of the blood; and a breaking down of the H_2CO_3, $NaHCO_3$ and NaH_2PO_4 of the blood into $H+H+CO_3$, $Na+H+CO_3$ and $Na+H+H+PO_4$, the H cations on account of the osmotic peculiarities of the stomach membranes pass into the stomach to unite with the Cl anions of the dissociated NaCl to form HCl, while the Na cations of the dissociated NaCl pass out to unite with the CO_3 and PO_4 anions of the dissociated H_2CO_3, $NaHCO_3$ and NaH_2PO_4, and thus contribute some of the alkaline constituents of the blood.

We have here a well-elaborated hypothesis which is apparently not inconsistent with any of the laws of dissociation or osmosis. In his original paper Koeppe offers no experimental proof of his theory. Nor was any attempt made afterward, to the writer's knowledge, to test this hypothesis until 1899. In that year Wesener[10] published an experimental investigation of Koeppe's theory. He introduced saline solution into a thoroughly washed stomach and after ten minutes withdrew the gastric contents. No HCl was found. Wesener then introduced more saline solution and inserted Turck's "gyromele," which he rotated to irritate the mucous membrane. Upon examining the gastric contents ten minutes later 0.1 per cent. HCl was found. From these results Wesener concluded that Koeppe's theory is untenable.

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*From the Sheffield Laboratory of Physiological Chemistry, Yale University.

Wesener's experiment does not in itself warrant his conclusion. Pawlow[11] has shown that *mechanical* irritation of the mucosa does not produce a true gastric secretion. At present it is generally believed that only psychical and chemical stimuli call forth a true gastric secretion. In this light neither the isotonic salt solution nor Turck's "gyromele" are gastric secretory stimulants, and therefore his results obtained under abnormal conditions do not fairly test the tenability of Koeppe's theory.

To test the tenability of Koeppe's theory the gastric secretion ought to be called forth under normal conditions—or, in other words, by food. In the writer's experiments, carried out upon himself, varying quantities of NaCl were taken with an ordinary test meal and after a definite period of time the gastric contents were removed and the acidity determined by the Toepfer-Freund[12] method.

In experiments XV and XVIII quantities of lactose, a non-electrolyte, and sodium sulphate, an electrolyte, respectively, were taken for comparison, in quantities, approximately equi-osmotic with the amount of sodium chloride found to produce a marked inhibition of hydrochloric secretion.

The results are summarized in the following table:

TABLE OF RESULTS.

No. of Experiment.	Date of Experiment.	Nature of food.	Time between meal and withdrawal of stomach contents.	Total acidity as HCl Per cent.	Free HCl. Per cent.	Combined acid. (as HCl) Per cent.
I	2–8	Riegel test meal	2½ hrs.	.288	.151	.048
II	2–11	Ewald meal	1 hour	.222	.151	.030
III	2–12	Ewald meal	1 hour	.255	.153	.051
IV	2 14	Ewald meal	1 hour	.251	.156	.040
V	2–16	Ewald + 1 grm. NaCl.	1 hour	.190	.110	.036
VI	2–18	Ewald + 2 gms. NaCl.	1 hour	.180	.107	.034
VII	2–19	Ewald + 3 gms. NaCl.	1 hour	.110	.054	.029
VIII	2–20	Ewald + 5 gms. NaCl.	1 hour	.091	.040	.032
IX	2–21	Ewald test meal	1 hour	.180	.110	.040
X	2–22	Ewald + 5 gms. NaCl.	1 hour	.054	....	.043
XI	2–23	Ewald + 5 gms. NaCl.	1 hour	.051	....	-022
XII	2–25	Ewald + 5 gms. NaCl.	1 hour	.065	.018	.021
XIII	2–26	Ewald T. M.	1 hour	.120	.080	.036
XIV	2–27	Ewald T. M.	1 hour	.135	.087	.022
XV	2–28	Ewald + 30 gms. lactose	1 hour	.170	.090	.040
XVI	3–2	Ewald + 5 gms. NaCl.	1 hour	.075	....	.060
XVII	3–3	Ewald T. M.	1 hour	.180	.110	.040
XVIII	3–4	Ewald + 6 gms. Na_2SO_4	1 hour	.166	.085	.042

From the above experiments the following conclusions seem to be justified:

(1) Excessive quantities of NaCl apparently exert an inhibitory influence on HCl secretion and thereby may impede gastric digestion. (This is in harmony with Miller's[13] observations.)

(2) The ingested NaCl is apparently not directly converted into HCl in the stomach to the extent—if at all—which one might theoretically expect, assuming the theories of Koeppe and Brasch[14] to be tenable.

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MEDICAL PROGRESS.

NEUROLOGY AND PSYCHIATRY.

The Etiology and Classification of General Paralysis.—Contrary to the opinions of many prominent neurologists, MORSELÉS (Rev. di Freniatria, Vol. XXVIII, fasc. 1) considers syphilis as the etiological factor in hardly 60 per cent. of the cases of general paralysis, which he defines as a distrophic disease of the nervous system resulting probably from intoxication. The abuse of alcoholic drinks, grave psychopathic hereditary tendencies, sexual excesses and arthritism all play at least as important a rôle in the genesis of the affection as does syphilis. In the majority of cases it is the combination of these factors that constitutes the cause of the disease; and even if there be one single cause, psychopathic heredity is of greater importance than syphilis alone; thus prostitutes, even though thoroughly syphilized, present a comparatively small contingent of general paralytics as compared with married women, whether syphilitic or not. With the exception of rare cases the disease usually develops from between 10 and 25 years after the initial infection, even when the patients had repeatedly subjected themselves to antisyphilitic treatment. Arthritism the author considers to be even a more frequent cause of the disease than syphilis, especially among the wealthier classes of people, where he encountered two-thirds of his cases with and without syphilis. These cases are of renal character and are frequently ushered in with epileptic or apoplectic attacks of uremic origin. This type of the disease is frequently unaccompanied by syphilis. Race, climate and general surroundings are all important factors in the genesis of general paralysis; thus the disease is very rare among Arabs and Abyssinians, among whom syphilis in its serious forms is quite frequent; nor is it encountered to any great extent among the Swedes and Norwegians, who are pronounced drinkers. Poor nourishment is not an infrequent cause, as observed among the poorer population of Italy. In a great number of autopsies performed by a very efficient pathologist, specific syphilitic lesions were found but once; while the changes found in the arteries and kidneys do not differ from those encountered in non-paralytic arthritis, apoplexy and alcoholism. The non-syphilitic origin of the disease is substantiated by the fact that syphilis does not appear as the constant causative factor, and other etiological agents produce the same clinical syndromes and pathological lesions. The relation between general paralysis and its etiology is illustrated by the well-known fact, that various pathogenic agents are apt to induce an identical anatomo-pathological process; thus similarly to general paralysis, epilepsy may be of syphilitic, traumatic, alcoholic, arthritic or hereditary origin. The fatalism of the Arab and the laziness of the Abyssinian are the real causes of the rarity of progressive paralysis in these races notwithstanding the frequency of syphilis among them; but as soon as European modes of living are introduced among them they rapidly fall under the sinister influence of the disease. The clinical picture of paralysis is protean in its manifestations: At the beginning, it may assume the form of melancholia, or mania, or epilepsy, or paranoia, etc., and even during its further course variable symptoms may appear occasionally. But from the very commencement the mental decadence becomes apparent, and sooner or later somatic symptoms follow. Tabes dorsalis may well be named the preface (the author calls it antechamber) to general paralysis. The abolition of patellar reflexes and the appearance of impotence are grave symptoms which may precede the full development of the affection in six or seven years, the remarkable remissions often show a return of the individual to his former personal integrity, and this fact is of immense importance as regards the question of his legal responsibility.

Contributions to the Knowledge of Hereditary Diseases.—Heredity is quite a specific cause of disease, according to E. Jendrassik (Deut. Zeitschr. f. Nervenheilk., Nov. 27, 1902) it produces certain forms of disease that can not be produced by other causes. It is not correct to accept a case as hereditary disease only when several members in a family are attacked by it; isolated cases often occur, and in families badly afflicted, even in the worst families, exceptions frequently occur. Indeed, these apparently healthy members transmit the disease to their descendants. The hereditary forms of disease, do not develop in quite typical, sharply circumscribed clinical pictures; on the contrary, the symptoms vary in endless combinations. For practical purposes specific types may be considered; nevertheless they should not be held different disease entities. The hereditary diseases may attack particular elements of the body, *e.g.*, the nervous system, the muscles (dystrophies), the connective tissue (obesity, wasting), the bones (achondroplasia, osteodystrophy), the separate organs, etc. In some cases only the disposition to various exogenous diseases is inherited; in others, direct aplasias, hyperplasias, atrophies and degenerations. The symptoms of a hereditary disease can display in the same family few or many differences, yet the clinical picture in general remains faithfully preserved. Peculiar, anomalous grouping of otherwise hardly associated symptoms in chronic, slow, progressive development would point with greatest probability to a hereditary degeneration. Consanguinity of parents increases in the greatest degree the possibility of the appearance of hereditary degeneration.

Tabes Dorsalis and Aortitis.—The opportunity has been afforded to P. F. Arulani (Rif. Med., Nov. 6 and 7, 1902) to study 68 tabetic cases, and from this experience together with the observations of other clinicians, he concludes that aortitis is a frequent accompaniment of tabes dorsalis; and with the former a relative insufficiency is often associated. The characteristic diastolic murmur may not be recognized unless the patient be examined immediately after exercising when the dilation of the aorta, brought about by the exertion, causes accentuation of the sound. The occurrence of aortic aneurism in tabetics may, in the author's belief, be attributed to the predisposing aortitis. Arulani holds it probable that the same toxic influences which give rise to tabes, such as alcoholism, syphilis, etc., may likewise be responsible for the accompanying aortitis, insufficiency and aneurism; and presents a description of two cases in which variola seemed to be the causative agent. However, he suggests that the nervous lesion may give rise to the vascular lesion or perhaps intensify it.

Operative Interference in Epilepsy.—There is probably no disease for which so many operative procedures have been recommended. R. E. Doran (Albany Med. Ann., Dec., 1902), of the Craig Colony, classifies these operations under three headings: (1) Those undertaken with the intention of removing sources of irritation in the brain; (2) those done on the theory that the diseases is caused by some abnormality of intra-cranial pressure or circulation; (3) those promoted by a belief in the reflex origin of epilepsy. The first group includes operations for the removal of traumatic or diseased conditions from the brain cortex. The second includes tapping and drainage of the cerebral ventricles, ligature of one or both vertebral arteries or veins, and of the carotid. The third includes a great variety, such as cutting of eye-muscles, removal of nasal and pharyngeal growths, division of the cervical sympathetic, stretching the pneumogastric, excision of cicatrices, circumcision, castration, hysterectomy, etc. Although many of these procedures have been discarded, they should not be entirely condemned. Reflex epilepsy is rare, yet all possible sources of reflex irritation should be sought for and all necesary operations done, giving the patient the benefit of the doubt. Although many operations have been done at the Craig Colony, the results have not altogether been satisfactory. The experience of recent years has done much to fix the limits of operative interference. The author reports 29 cases of trephining, 24 prior to and five after admission. Traumatism to the head was known in 17 cases, the others gave no traumatic history. Of all these, six were improved, 19 were unimproved, two were in doubt, and two were worse after the operation. None were cured, though in certain cases the attacks were lessened. Of five cases re-operated at the Colony, none were cured, though a benefit was noted in two. Medical treatment may have influenced the latter. The results of late operations therefore are discouraging and the author advocates early operation after traumatism to the skull, with the hope of averting the disease. Operative cases must be selected with great care and studied from both medical and surgical standpoints. Partial epilepsy is not an absolute indication and heredity must always be considered, also the question of alcoholism. Oophorectomy has often been recommended and the author thinks it is justifiable in certain cases when other measures have failed, especially when the patient becomes worse mentally, morally and physically, when erotic tendencies are present, when the attacks are worse at the menstrual periods, or when there is ovarian disease present which would indicate operation in a non-epileptic patient. Four cases are reported with apparent improvement but at least three years ought to elapse with freedom from attacks before a cure should be reported. Too much dependence should not in any case be placed on the operation itself. The general health and diet should be regulated, and bromides given if they cause any benefit. Alcohol should be prohibited and an outdoor employment advocated. Indulgence in any form of excess or mental and physical indulgence must be avoided.

Monoplegic Disturbances of Sensibility in Cortical Paralyses.—It has never been conclusively proven just where the centers governing sensation are situated but it seems to be the consensus of opinion now that they are placed just behind the motor area in the parietal lobe. S. G. KAHN (Med. Rec., Nov. 22, 1902) reports a case of depressed fracture with operation, in which the injury to the brain seems to have been pretty definitely localized in the ascending frontal convolution and the intermediate neighborhood of the Rolandic fissure. There was some destruction of the superficial brain tissue in this region but the man made a good recovery. It was found that he had not only loss of motion but also loss of sensation of the entire left arm, hand and side, down to the lumbar region. The area involved was from the median line in front to the spinal column behind. In explanation of this condition it is suggested—and it has been claimed previously by several authorities—that the centers of sensation are located in the same area with the motor centers but probably upon a deeper plane. The occurrence of both paralyses and anesthesia would depend therefore largely upon the depth of the destruction rather than upon its superficial extent.

The Invulnerability of Epileptics.—The infrequency with which suppuration of wounds occurs in epileptics has been widely commented upon. V. TIRELLI (Rif. Med., Nov. 29, 1902) has sought to determine experimentally whether or no the comparative immunity to stphylococcic infection enjoyed by this class of patients were due to an antipyogenic property inherent in the blood. To this end he treated staphylococcus cultures with epileptic blood-serum before placing them in the thermostat; with the result that the devolopment of such cultures was much slower than that of the control cultures treated with normal blood-serum. Further, when the cultures to which epileptic blood-serum had been added were injected endovenously into animals, they survived longer than those injected with the control cultures. An attempt was made to ascertain whether successive injections in animals of epileptic blood-serum would confer immunity to staphylococcus infection, and also whether the blood-serum of animals subjected to such injections possessed therapeutic value in acute staphylococcus infection. Owing to the accidental death of the animal injected with the epileptic blood-serum, the question of immunity was not determined, but the serum extracted from its body was utilized in the treatment of an animal in whom acute staphylococcus infection had been produced; with the result that it survived twice as long as the control animal.

Friedreich's Disease.—Though usually regarded and described as a hereditary ataxia, it would be more accurate to denominate Friedreich's disease "family ataxia," since the disease seems rather to attack members of the same generation than of successive generations. In one family several children may be attacked while others escape. Errors in diagnosis are no doubt often made, but the literature since 1890 embraces numerous cases which are beyond reproach. Rütemeyer collected 90 cases ocurring in 36 families. The average age at the onset of the illness is 15 years, but it may be more advanced, and it is remarkable that when the disease appears in several members of a family its first symptoms are usually manifested in all at the same age. Thus in a family of six children observed by M. COUSOT (Bull. de l'Acad. de Méd. de Belg., Oct. 25, 1902), three began to suffer with trembling, incoordination and weakness at eighteen years of age. In the most advanced case there are now present titubation, weakness and wasting of the lower extremities, trembling and incoordination in the upper extremities, diminished patellar reflexes, active cutaneous reflexes (plantar, cremasteric, abdominal). Speech is slow, heavy, embarrassed; handwriting uncertain and irregular. The pupillary reflexes are intact and the fundus of the eye normal. Nystagmus is only marked when the patient attempts to look sidewise. When the patient lifts his foot from the ground the toes turn up toward the dorsum of the foot and the plantar arch becomes markedly exaggerated. The picture in this case is classic and the two remaining cases are no less typical, though belonging to an earlier stage of the disease. The lesions in Friedreich's disease are in the posterior and lateral columns of the cord, especially in the column of Goll, the direct cerebellar tract, Gower's tract and in the origin of the fibers in the gray matter (cells of the column of Clarke). A number of autopsies showed also sclerosis of the crossed pyramidal tracts, but Marie maintains that the fibers involved did not really belong to the crossed pyramidal tracts but were fibers of the antero-lateral and the direct cerebellar tracts. The prevailing pathological notion of Friedreich's disease is that it is a sclerosis of the medullary bundles; but this does not explain the occurrence of the disease in several members of the same family. It seems more logical to regard it as essentially a congenital disorder or a developmental disease, of which the sclerosis is merely a secondary manifestation. An anatomical fact which supports this theory is the extreme thinness of the spinal cord in these cases; the dimensions of the cord often are less than three-quarters of those of normal cases, as in the case described by Newton Pitt. The theory of developmental error has the support of Senator, Giuzzetti and others. In Cousot's cases it is noteworthy that all three have high-arched palates. We have here the phenomena of similar malformations in several members of the same family, and of more than one malformation (spinal cord and palate) in each individual. Both of these coincidences have teratological significance. The question arises, Must Friedreich's disease be classified as a teratological condition?

Infantile Paralyses: An Epidemic of 38 Cases.—For the purpose of showing the possible infections and epidemic character of this disease, C. F. PAINTER (Bost. Med. and Surg. Journ., Dec. 11, 1902) places on record 38 cases occurring at Gloucester, Mass., in the summer of 1900. All of these cases were found within a radius of four miles. Many current works on neurology and pediatrics do not refer to the possible infectious character of this disease. No mention of epidemics is found in Holt, in Pepper's "System," in Dana, or in Oppenheim. Epidemics are referred to by Marie, Rotch and Collins, and are reported from original observation by Colmer, Bergenholtz, Cordier, Caverly, Brackett and others. Painter prefaces the clinical history of his 38 cases by a description of the hygienic conditions in Gloucester, from which, however, no important deductions are made. Local physicians attributed the epidemic to great changes in temperature which occurred during the period of the epidemic. Painter believes that there is no doubt about the infectiousness of anterior poliomyelitis, and bases this belief on the great similarity in the symptom-complex as observed throughout all the cases, and the resemblance to symptoms long recognized as indicative of infection. A majority of the cases occurred during, or more frequently a day or two days after, a period of extreme heat; in other cases they followed bathing in the ocean. The clinical histories present nothing unusual. The statistical summary is as follows: Two-thirds of the patients were males. The youngest was 13 months, the oldest 10 years; 21 cases were three years or younger. No case entirely recovered; one case died.

Neurasthenia and Its Treatment.—Neurasthenia is not a morbid entity, but a combination of conditions, on the recognition of which the diagnosis and prognosis depends. It is a persistent state of enfeeblement of nerve force, due to a nutritive derangement of the nervous elements. As Gilles de la Tourette has said there is no such thing as neurasthenia, but rather a neurasthenic state. There are true neurasthenics and false or hereditary neurasthenics. According to C. N. De Blois (la Rev. Med., Nov. 12, 1902) the objective symptoms of true neurasthenia are slight or none, and the subjective distinctly psychical. They are: (1) Headache, frontal or temporal, like a heavy helmet on the head, and lasting only during the daytime; (2) vertigo, a sensation of cerebral emptiness rather than real dizziness, with feebleness of the lower limbs; everything appears dull and gray, and muscæ volitantes are seen, the oculist being frequently consulted; (3) pains, localized at the back of the neck and along the spine, and especially at the sacrum; (4) in this latter situation being accompanied by fatigue in the legs; (5) no anesthesia, no abolition of reflexes, no urinary troubles; (6) much lassitude, often cannot fix the attention, cannot read; (7) insomnia, a most frequent and important symptom; (8) gastro-intestinal disturbances, poor appetite, slow digestion, heaviness in stomach during digestion (rarely vomiting), gurgling of the intestines. The alimentary tract shares in the general nervous depression; (9) mental condition, sometimes elevated, usually depressed, feebleness of the will, disinclination to work, subjective sensations of impaired function in various organs. The brain remains clear. (10) There is a definite cause to be found for the condition, a distinction from false neurasthenic states.

The treatment consists of a cold douche in the morning every second day, with a warm douche at noon, and on alternate days a warm douche in the morning and a foot-bath at noon. A bath with static electricity for 15 minutes three times a week, injection of artificial serum every second day, and internally iron, bromide of strontium and trional. Hygienic and moral influence are necessary adjuncts to the other treatment.

Two Cases of So-Called Landry's Paralysis; Autopsies.—The first of these cases cannot be regarded as typical of so-called Landry's paralysis. The patient gave a history of a previous attack of sudden paralysis involving both arms and legs, which gradually regained their power, so that the patient was able to resume work after five weeks. The patient remained at work a little more than a month when a second attack occurred. She was examined by E. W. Taylor and G. A. Waterman (Bost. Med. and Surg. Jour., Dec. 25, 1902) who found paralysis of arms and legs with a certain amount of sensory disturbance, associated with persistent vomiting for several days. At no time was the temperature above 99° F. Nineteen days after the onset of the attack respiratory embarrassment was first noticed; no cranial nerve or brain involvement could be made out. The mind remained clear up to ten minutes before death. A post-mortem examination of the spinal cord failed to show any evidence of inflammatory change; even the ventral horns showed no departure from the normal vascular condition. The meninges were likewise normal. The nerve cells of the ventral horns, on the other hand, showed alterations. In the lumbar and cervical enlargements many cell bodies showed changes characterized by chromatolysis, usually central, displacement of nuclei toward the periphery, marked distortion of the nucleus in many instances, and in others loss of the nuclear membrane. Peripheral nerves did not show ordinary signs of inflammation or of myeline degeneration. In the anterior crural nerve there was a large recent hemorrhage of undetermined source. Such hemorrhages were not found elsewhere, either in peripheral nerves or in the cord. In the oblongata, however, at the level of the hypoglossus and glossopharyngeal nuclei, the blood vessels were highly congested and numerous hemorrhages from the smaller vessels were evident. The oblongata in other respects was normal. As in many recorded instances the pathological changes found do not adequately account for the symptoms observed during life and the fatal outcome. In the second case sensory symptoms predominated at first; motor paralysis was very rapid in onset and showed no typical ascending course. Death occurred five days after the onset of the disease. The pathological examination in this case showed nothing beyond a certain degree of vascular congestion, particularly involving the smaller vessels in the dorsal horns. Nephritis was present; but this certainly does not explain the nervous phenomena. These cases will not assist in the definition or pathological classification of so-called Landry's paralysis. They are simply a further demonstration of the fact that a fatal disease of the nervous system occurs which is not explainable by the post-mortem findings.

Acute Poliomyelitis and Encephalitis.—Upon the question as to what is the cause of the changes noted in these two diseases in the nervous tissues concerned, and epecially as to the part in that cause played by thrombosis, the following points are offered by F. E. Batten (Lancet, Dec. 20, 1902): It has been stated by those who support the view that the condition is primarily inflammatory, that many observers have occluded the vessels of the spinal cord for varying periods, and examined the changes so produced, but, although they found marked chromatolysis of the cortical cells, they did not find perivascular exudation or hemorrhage. Furthermore, they state that Dr. Leonard Hill ligated the cerebral arteries in monkeys and the brains of these animals were examined by Dr. F. W. Mott at various periods after the operations, who found extreme chromatolysis of the cortical cells, but no inflammatory change or hemorrhage. Such an argument sounds almost conclusive, and would at once negative the view that there is primary thrombosis, but it must be remembered that obliteration of a large vessel is by no means necessarily comparable to the condition which is produced by thrombosis occurring in smaller vessels. Far more to the point are the experiments of Prevost and Cotard with regard to the changes which take place in an infarcted area. They, by injecting fine tobacco powder into the vessels, succeeded in getting infarcts in various organs, and they proved by these experiments that congestion, hemorrhage, and exudation of cells were the early result of obliteration of small vessels. Having therefore established the possibility of such a condition as is found to be present in these cases of acute encephalitis and poliomyelitis, being due to a primary thrombosis, the next point to show would be that the pathological process may be limited to the distribution of a single vessel. If one therefore studies the vascular supply of the spinal cord it is found that the gray matter of the anterior horns receives its chief supply from branches of the anterior median artery, the white matter being chiefly supplied by vessels arising from the pia mater. The branches of this anterior median artery supply the whole of the gray matter of the anterior horns but not that of the posterior horns. In the spinal cord from cases of infantile paralysis the line of demarcation between the affected and unaffected part is sharply defined and limited to the gray matter of the anterior horns—that is to say, the area of congestion, or, in the later stages, of necrosis, corresponds very closely to the area of the blood-supply of the anterior median vessel. It cannot be asserted that the process is always thus accurately limited, for it is well known that the vessels in the ventral portion of the spinal cord and outside the gray matter are often engorged and possibly thrombosed, and again in the gray matter small areas of softening are found which do not occupy the whole of the gray matter. Such conditions are easily explicable, since congestion of vessels commonly occurs around an infarcted area and the localized softening in the gray matter is due to the thrombosis occurring in the smallest vessels. The microscopic appearances of the softening of the gray matter of the spinal cord correspond closely with that due to thrombosis of small vessels in the brain. The very frequent occurrence of anterior poliomyelitis in the lumbar sacral region seems to be another point greatly in favor of the view that the condition is primarily vascular, for it is well known that the gray matter of the anterior horns of the lumbar region is situated at a point most peripheral from its blood supply, *i.e.*, the blood derived from the vertebral artery has to travel the whole length of the anterior median artery, and it has been shown by Moxon that the reinforcing arteries of the roots do not readily assist the supply of that part of the cord. These, then, are the points in favor of the disease being due directly to a primary vascular thrombosis; in favor of the view that the disease is of direct bacterial origin may be quoted its prevalence during a certain period of the year, becoming epidemic, as in the present year, and its occurrence in several members of a family in its various forms, either cerebral or spinal, of which a most interesting example has been published by Dr. W. Pasteur. The author's arguments have been drawn chiefly from the pathological examination of the spinal cord, as the opportunity for examination of that part of the nervous system most frequently occurs. But what has been said in regard to the nature of the lesion applies equally to those cases in which the medulla, pons, cerebellum, or cortex is affected, the lesion being a primary thrombosis of the finer and terminal arteries. In conclusion, though there are many gaps to be filled up by further pathological investigation, he trusts that he has given grounds for considering cases of acute encephalitis and acute poliomyelitis as clinically identical; pathologically they are identical. The more frequent recognition of these cases of encephalitis will explain many cases of so-called meningitis in which recovery more or less complete takes place.

Chorea.—The treatment of this disease rarely takes account of the fact that it is often of infective origin, and that there is an equal chance for it to be due to the pathogenic action of the streptococcus and staphylococcus. Having had occasion to trace an autopsy on a victim of chorea in which all the organs were found to give pure cultures of streptococci, P. A. PREOPRAJENSKY (La Sem. Méd., Dec. 10, 1902) concluded that it might be advisable to treat certain forms of chorea with antistreptococcus serum. His first attempt was upon a young girl, eighteen years old, from whose blood pure cultures of streptococci were easily obtained. She presented a grave degree of chorea, which continued to increase in severity, notwithstanding the free use of bromide of sodium, chloral, arsenic and other well-known remedies. After a few injections of antistreptococcus serum the choreiform movements began to diminish, and finally after about two weeks ceased. Various muscular weaknesses and paralyses began to mend at the same time. She suffered a slight relapse, which was checked by the same method. This fact, although isolated, warrants note, and may merit a repetition upon other cases. The same authority notes that he found streptococci in the blood of another patient suffering from this disease in the hospital at the same time.

PHYSIOLOGY.

Saline Diuresis.—The absorption from the renal tubules in the rabbit when the outflow is obstructed, according to A. R. CUSHNY (Jour. of Physiol., Dec. 15, 1902) is differential, the water and chlorides returning to the blood much more rapidly than the sulphates, phosphates and pigment. The presence of these last in the glomerular secretion must therefore tend to retard the absorption of water by opposing osmotic resistance to the absorbing force; when as after their intravenous injection, they are present in large amounts, the urine is increased more than when such permeating bodies as the chlorides are in excess. If the absorption in the tubules under normal circumstances is similarly differential, as appears probable, this is sufficient explanation of the variation in the diuretic action of different salts. The saline diuresis seems to be due not to stimulation of the excretory cells of the kidney primarily, but to the changes in the circulation of the kidney; for when these are excluded, the ingestion of salt solution causes little or no change in the urine, and on the other hand, an increase in the volume of blood, without change in its constituents, appears sufficient to induce diuresis.

Action of Carbon Dioxide on Muscle.—By arresting the liberation of energy, carbon dioxide hastens the fatigue of muscle, according to L. DE LHOTA (Jour. de Physiol., Nov. 15, 1902). In consequence of the arrest the muscle can not exhaust itself, and it preserves the store of energy which can be freed after the removal of the carbonic acid. This gas is therefore a favorable factor in the conservation of the muscular power. Although obtained by methods wholly different, the researches of the author lead to the same conclusions, as those of R. Dubois, drawn from the latter's researches on the mechanism of fatigue and of sleep through carbon dioxide autonarcosis.

The Conditions of Action of the Pancreatic Secretion.—On comparing the ferment-liberating action of the succus entericus from the duodeno-jejunal region of the intestine of the dog with that of an active tryptic extract of pig's pancreas, H. M. VERNON (Jour. of Physiol., Dec. 15, 1902) found that working with a sample of dog's pancreatic juice which contained practically no free trypsin, the latter agent acted considerably more actively than the former. For instance, in six hours at the room temperature, one per cent. of active tryptic extract had set free three times more ferment than had one per cent. of succus entericus. Upon inactive glycerin extracts of the pancreas the active trypsin likewise exerted, as a rule, a more powerful ferment-liberating influence than did the enterokinase of the succus entericus. The ferment-liberating action of enterokinase is retarded by 0.1 per cent. sodium carbonate and almost stopped by 0.2 per cent. sodium carbonate while active trypsin can set free ferment in all strengths of sodium carbonate from 0.05 up to 0.6 per cent. almost as well as in neutral solutions. Also 0.025 per cent. hydrochloric acid retards the action of enterokinase more than that of active trypsin. The addition of small quantities of bile slightly enhances the action of both ferment-liberating agents probably in virtue of its faint alkalinity, which neutralizes the slight acidity of the zymogen extract. Enterokinase is not destroyed by the addition of sodium carbonate, but merely paralyzed in its action. After neutralization of the alkali by hydrochloric acid it will exert its ferment-liberating powers as efficiently as before. Dilute hydrochloric acid on the other hand has a destructive action on the enterokinase as well as a paralytic one. Trypsinogen is a more stable body than trypsin, though exact comparisons of stability are difficult, owing to the gradual liberation of enzyme from the zymogen on keeping it with dilute acid or alkali. Still the results obtained show that 0.1 to 0.4 per cent. sodium carbonate destroys nearly twice as much enzyme as zymogen, and 0.05 to 0.1 per cent. hydrochloric acid nearly four times as much when acting for two hours at 38° C.

Chemistry of Blood in Chlorosis.—The following chemical changes were found in chlorotic blood by F. Erben (Zeitsch. f. klin. Med., Vol. 47, Nos. 3 and 4). The amount of albumin is diminished, on account of the diminution of hemoglobin; the relation of albumin to globulin is normal and the amount of fibrin increased. There is considerably more fat than normal in both the serum and the erythrocytes; the lecithin is diminished in the total blood and the serum but seems to be increased in the red cells. Cholesterin is present in smaller amounts in both the serum and red cells. In the ash, phosphoric acid, potassium and iron are considerably reduced, calcium and magnesium are increased. The increase of sodium chloride is only apparent, since chlorotic blood contains a higher percentage of serum than normal blood; the amount of sodium chloride in the serum is not, however, increased.

Chemistry of the Liver in Acute Yellow Atrophy.—The following analysis of the liver in one case of acute yellow atrophy, is given by A. E. Taylor (Jour. of Med. Res., Nov., 1902). The loss of substance was disproportionate to the reduction in the total weight, hence the liver was hydremic. The nitrogen was in proportion to the dried residue. Glycogen and hexon bases were absent, albumoses and notable quantities of leucin and asparaginic acid were present. The quantity of ash and of fat was normal and the latter contained an excess of free fatty acid and of oxy-acids and alcohols. In conclusion the statement is made that acute yellow atrophy of the liver should not be classed as a fatty degeneration.

Sodium Chloride and the Constituents of the Urine.—The disappearance of the chlorides of the urine, according to R. A. Hatcher and T. Sollman (Am. Jour. Phys., Dec. 1, 1902), does not lead to any very large changes in the other urinary constituents—not sufficient at least to alter the physical properties of this fluid. Nor does the administration of sodium chloride produce such changes. This subject is of practical application from the viewpoints of diagnosis and therapeutics. According to the school of v. Koranyi, heart disease can be diagnosed from a high $\frac{\text{c.t.}}{\text{NaCl}}$ joined with a low c.t. $\times$ c.c.; (c.t. is total concentration and is obtained by dividing the depression of the freezing point by 1.89; c.c. is the total quantity of urine for 24 hours in cubic centimeters). The authors' results show that the same change results in at least an equal degree from a milk diet. Unless due value is given to this fact a mistake in diagnosis may occur. The addition of sodium chloride to a milk diet results in a greater excretion of urine and metabolites; the latter are at the same time diluted. The author thinks these effects are desirable especially in fevers. The retention of chlorides shows furthermore that the body requires a certain amount of sodium chloride which is not supplied by the insufficient quantity of this substance contained in the milk. For these reasons the addition of sodium chloride to a milk diet appears commendable. The salt may be added directly to the milk without inconvenience. It should be distributed so that about 15 grams are taken per diem.

The Ripening, Natural Death and Prolongation of Life of the Eggs of the Starfish—The experiments and observations of J. Loeb (Pflüger's Archiv, Nov. 8, 1902) seem to prove that in the same sea-water and under the same conditions, the ripe but unfertilized eggs of the starfish rapidly die, while the unripe as well as the ripe fertilized eggs remain alive for a longer time. It seems to be certain that the early death of the ripe unfertilized eggs is connected with the intrinsic processes concerned with ripening and is not dependent on the bacteria of the sea-water, since, in the first place, the death of ripe eggs takes place equally as rapid in sterilized sea-water as in non-sterilized sea-water, and in the second place, eggs whose ripening is prevented by extraneous measures, can remain alive for a long time in water containing many bacteria. The author has demonstrated that oxygen and free hydroxyl ions hasten the ripening of the eggs of the starfish, and that on the other hand poverty of oxygen and a neutral or a weak acid reaction inhibits or delays ripening. The fact that the eggs which remain unripe in the ovary of the starfish ripen as soon as they get into the sea-water, receives its explanation, at least in part, from the above circumstances. If the eggs are prevented from ripening by means of oxygen-starvation or by means of acids, they will live longer than if they are allowed to ripen. Moreover the eggs whose ripening has already begun or has been nearly or entirely completed, seem to be protected from an early death by these same influences. The above facts seem to lead to the conclusion that the process of ripening of the eggs and the process of fertilization do not necessarily depend on the same chemical processes. Fertilization by means of the spermatazoon or by means of chemical or physical agencies prolongs the life of the egg, while the processes connected with the ripening of the egg lead, possibly by autolysis, to its death. Agreeing with this is the fact that the same treatment with acids that brings about artificial parthenogenesis of the ripe eggs of the starfish, if used in the case of the unripe eggs of the starfish inhibits the process of ripening. The author believes that these facts confirm his earlier hypothesis that the fertilizing action of the spermatozoon depends upon the fact that it brings substances or conditions into the egg which accelerate the course of certain processes, possibly of a synthetic nature, in the latter. A similar acceleration might, for example, be produced by certain ions as the hydrogen ions of the nuclein-acids, but one must not exclude the possibility that catalytic processes of this kind can be produced by enzymes or other substances or conditions. It must, however, be borne in mind that the author succeeded in producing in unfertilized eggs, by means of certain ions, normal embryos capable of development, but that all the experiments carefully conducted in his laboratory by Gies to accomplish the same by means of enzymes have as yet not succeeded.

Respiratory Metabolism.—Living protoplasm has the capacity to bind oxygen, according to J. Rosenthal (Arch. f. Anat. u. Physiol., Nov. 28, 1902), in a compound whose production is accompanied by very little evolution of heat, and this oxygen leads to the formation of carbon dioxide, water and nitrogenous products of which urea is an example. The quantity of this intracellular oxygen is variable; with a high partial pressure of this gas much more of it can be bound than is necessary for the production of the end-products. When the income of oxygen is deficient the formation of the end-products takes place at the expense of the stored-up intracellular oxygen as long as the supply of this material lasts.

The Iodine-Content of the Thyroid.—The administration of bromides, according to W. A. Nage and E. Roos (Arch. f. Anat. u. Physiol., Nov. 28, 1902), does not influence the iodine-content of the thyroid and no storage of bromide takes place in the organ. After extirpation of the greater part of the thyroid gland an increase in the iodine-content of the remaining portion of the glandular mass occurs. If only half of the whole gland is removed, this change takes place distinctly only in those cases in which the animal had become pregnant. In the latter a greater time had elapsed between the extirpation of both portions than in the case of the non-gravid animals. The administration of pilocarpine does not influence the iodine-content. The authors do not draw any conclusion as to the mode of action of the thyroid, at any rate not the conclusion that the gland does not secrete the iodine compounds.

Are the Hemolymph Nodes Organs Sui Generis?—The majority of the structures known as hemolymph nodes appear when superficially examined to resemble ordinary lymphatic nodes. But during the last three decades many investigators have recognized the presence, in man and certain lower animals, of red, spleen-like or blood-containing lymph glands. The questions concerning the source of the red blood cells found in these nodes, and the manner of its entrance into the gland, are answered in various ways. The nodes in question have been variously interpreted as (1) newly formed splenic tissue; (2) neoplasms; (3) hyperemic or hemorrhagic lymphatic glands; (4) lymphatic glands containing red cells formed within the gland; (5) organs sui generis, the so-called hemolymph nodes. A. S. Warthin (Trans. Chicago Path. Society, Nov. 12, 1902) supports the view first advanced in 1884 by Gibbes, that the hemolymph nodes are independent and permanent structures; this hypothesis has the support of Clarkson, Drummond, Vincent and Harrison, Weidenreich, Morandi and Sisto. Warthin points out that glands with sinuses containing blood are constantly present in man, the ox, sheep and goat. The hemolymph nodes in man are found only in certain regions, *i.e.*, in the prevertebral fat, and in the retroperitoneal and pelvic fat, and in the neighborhood of the renal and adrenal vessels. Regularity of occurrence indicates specific character. The hemolymph glands are found in conditions in which no coexisting hyperemia is present. The prevertebral hemolymph nodes cannot be regarded as hypostatic lymph glands; their occurrence in the living body and in cadavers in which there is no hypostasis, and the fact that red hemolymph glands are found side by side with pale lymphatic glands, rules out hypostasis as a factor determining the characteristics of these structures. Certain sections of the hemolymph nodes show that in certain of these organs neither afferent nor efferent lymph vessels are present. In those hemolymph nodes possessing afferent lymphatics no red cells are present in the latter. In those nodes in which red cells are found in the efferent lymphatics the red cells are brought to the node in the blood vessels and not in the lymphatics. Communication between the blood and lymphatic systems must occur within the node. The most marked differences between the hemolymph node and the ordinary lymph glands are shown in the course and structure of the blood vessels; further differences of structure are numerous. Among the hemolymph nodes themselves a great variety of form is found. Some possess a spleen-like pulp and may be termed splenolymph. A second type of node containing blood-sinuses does not contain spleen-like pulp; this class may be designated hemal gland, as suggested by Clark. A third type resembles the ordinary lymphatic node, but differs from it in possessing reticular spaces which on one side communicate with blood vessels, and on the other with efferent lymphatics; in the lymph-sinuses of these a mixture of bloom and lymph is found; to this type Warthin would restrict the term hemolymph or blood-lymph node. All types and varieties are to be gathered under the comprehensive designation lymphatic glands, hemolysis being the chief function of these organs. Aside from the destruction of red cells, these nodes serve as centers for the formation of leucocytes and blood plasma, and probably also take part in the destruction of leucocytes. Eosinophiles are also formed in large numbers in these glands, the eosinophile granules arising from the disintegration products of red cells taken up by mononuclear leucocytes, the nuclei of which become polymorphous.

Animal Fluids and Tissues in Physico-Chemical Relation.—The difference between the peptic and the tryptic digestion of albumen, according to M. Oker-Blom (Skand. Arch. f. Physiol., Dec. 12, 1902) appears at the present day distinctly in the different relation of the electric conductivity and the lowering of the freezing-point of the respective mixtures. In tryptic digestion the electric conductivity and the lowering of the freezing-point increase regularly up to a certain limit; above all, the lowering of the freezing-point increases relatively more rapidly than the electric conductivity, after a time giving way to the opposite relation, which brings one back to the fact known for a long time, that the first splitting-products of albumin are non-conductors, while the later products are electrolytes. In peptic digestion the electric conductivity has a steady fall, which is to be attributed to the affinity between the resulting splitting-products and hydrochloric acid; and indeed this occurs up to a certain point which does not appear to be dependent on the absence of free hydrochloric acid. With reference to peptic digestion the lowering of the freezing-point is a variable factor, and affords no definite interpretation of the corresponding processes of hydrolysis.

The Hemolymph Glands and Spleen.—It is probable that in addition to the spleen, glands which may be placed in the category of "hemal" or "hemolymphatic" are universally present in mammalia, according to T. Lewis (Internat. Monatschr. f. Anat. u. Physiol., Vol. 20, Nos. 1 to 3). These are distributed with considerable degree of constancy in three main groups—renal splenic and subvertebral. The blood or blood-lymph spaces of these glands are traversed by a fibrous reticulum, forming a network of spaces lined by cells commonly called "reticulum" cells, which form a continuous layer with the typical endothelial cells bounding the sinus and lining the vessels entering or leaving it. In the modified hemal glands of the rat, small arteries open directly into the sinuses, while veins proceed from the sinuses and appear to have direct communication with them, being strongly guarded by valves. The glands in the rat and dog have been observed to have an abundant nerve supply from the sympathetic. Stimulation of the nerves or the gland itself causes slight but definite paling of the organ and a diminution in size. In the hemal lymph glands the blood and lymph streams meet and to a great extent mix. Hemal glands, inclusive of spleen and hemal lymph glands are centers for the destruction of the blood elements, both red and white. Glands falling under the head of ordinary lymph glands may have this function to a slight degree. This takes place by a process of phagocytosis common in all. The process as applied to an erythrocyte is briefly as follows: A red cell is ingested by a phagocyte, and the cell contents are first liberated; the globular mass of hemoglobin is transformed into granules of bright yellow pigment, by a gradual process extending from the periphery to the center of the globule. The final product appears to be a substance allied to bilirubin, and is liberated in the adenoid tissue. In the rat the lower members of the hemolymph series are in proportion to their size, if not absolutely, more important as destroyers of erythrocytes than the spleen. The phagocytes are probably derived from any of the endothelial cells attached to the wall of the sinus or meshes of reticulum. It is not impossible that still others may be transformed varieties of leucocytes. The hemolymph glands form structurally an almost unbroken chain of organs, the simplest or least differentiated being the ordinary lymphatic glands, while the most highly differentiated is the spleen. Between these extremes are found structures of every possible gradation, including hemal lymphatic glands, hemal glands and accessory spleens. The spleen pulp is not only homologous with the sinus of the lower members of the series, but structurally is almost identical with it. This sinus is marked off from the adenoid tissue represented by the Malpighian corpuscles, by a definite endothelium, in every way comparable to that found in typical hemal glands.

Oxidase and Lipase in Milk.—Possessing certain properties characteristic of living substance, milk, according to A. B. Marfan and C. Gillet (Mtsheft. f. Kinderh., Nov., 1902), contains ferments and perhaps also alexines. Of the former oxidase may easily be detected by adding to milk (one c.c.) an equal bulk of tincture of guiac and a few drops of hydrogen peroxide, when a blue coloration results. It is destroyed at a temperature of 78° to 79° C., it does not dialyze, and it passes slowly and with difficulty through a porcelain filter. Its activity is weakened by the majority of antiseptics. There is, therefore, in cow's milk a ferment which, unlike the true oxidases which work merely in the presence of air, is capable in the presence of the peroxide of hydrogen of causing oxidation. It is, therefore, an indirect oxidative ferment and has been called by Bourquelot, anaeroxydase. It is uniformly distributed in the milk, united to the proteid but more closely to the soluble albumin than to the casein. It is present in the milk of the goat, cow, sheep and bitch in the descending order of activity. It is not found in woman's, ass's and mare's milk. The reaction is occasionally seen in human milk as the result of the presence of colostrum corpuscles, for the polynuclear leucocytes contain the indirect oxidase. This fact is of note, particularly in reference to the theory now current, that the oxidases come from the leucocytes, and that the ferments present in the tissues and fluids come from destroyed leucocytes. Likewise pus gives this reaction. If an energetic oxidase reaction is found in milk seven or eight days after parturition, one may suspect some purulent process in the breast. Lipase or monobutyrinase was discovered by the authors in 1900, who found that fresh milk can decompose monobutyrin into butyric acid and glycerin, which is not the case with cooked milk. This ferment is of great activity in human milk, but of slight activity in cow's milk.

Concerning Antiferments.—For a long time, according to E. Weinland (Zeitschr. f. Biologie, Vol. 44, N. S., Vol. 26), the fact has been recognized that animals parasitic in the stomach and intestine, *e.g.,* worms belonging to the groups nematodes, trematodes, cestodes and acanthocephali, are not affected by the digestive juices that cause solution of the remaining ingesta. The cysticerci, or larvæ of teniæ, in order to reach the intestine, must traverse the stomach and withstand the acid and pepsin of the gastric juice. The bladder is dissolved, but the head and neck remain. The researches of the author indicate that there is no doubt that the parasitic worms living in the stomach, intestine, peritoneum, liver, etc., are protected against the proteolytic ferments liberated by these organs or contained in their juices, by virtue of specific bodies, antiferments, which are formed in the body of the parasite; these inhibit the action of pepsin, or trypsin, and may be called "antipepsin" or "antitrypsin." This body can be precipitated from the expressed juice of the animal acting as parasite, without fully losing its activity. Fibrin can be impregnated with this substance and thereby withstand the action of the proteolytic ferments for a longer or a shorter time. Heretofore physiologists have speculated as to how the mucous membrane of the digestive tract resists the action of the proteolytic enzymes. With the above results as a suggestion toward the solution of this problem, the author undertook an investigation with the following results: The intestinal mucosa of the higher animals contains a substance, antitrypsin, which possesses substantially the same properties as that found in ascaris. It can be obtained in the form of an extract from which by means of alcohol a precipitate may be obtained and dried. This is sensitive to higher temperatures, and by the process of isolation loses much of its activity. In the extract obtained from the mucous membrane of the stomach there is a body having antitryptic properties, and besides it contains a ferment which in spite of the antiferment, is capable of digesting fibrin in an alkaline medium. The antiferments are contained in carnivorous plants, *e.g.,* drosera, dionaea, and also in the protozoa. The question arose whether they are present in all the cells of higher animals. This has been answered in the affirmative by certain investigators who detected the presence of antiferments in liver, muscle, defibrinated blood and blood serum, and in the red blood cells of the pig. These bodies prevent the autolysis of living tissues.

Effect of Cocaine upon Intestinal Absorption.—As it is generally recognized that cocaine exercises a paralyzing influence upon living protoplasm, A. Baldacci and G. Guido (Rif. Med., Dec. 2, 1902) have availed themselves of this property to determine how much of the absorption which takes place in the intestine depends upon the purely physical processes of osmosis and diffusion, and how much upon cellular activity. For this purpose, a series of experiments was carried out upon rabbits; a section of the small intestine being isolated, tied at either end, and again at a point midway between the two ligatures. In one of the subdivisions thus formed, a solution of cocaine was injected, and in the other, distilled water or normal salt-solution. The comparative absorption in each was then tested with injections of glucose, strychnine and fatty substances; with the result that absorption was found to be noticeably diminished in that part of the intestine treated with cocaine; from which the authors conclude that intestinal absorption is not a purely physical process, but depends upon the activity of the intestinal epithelium. Further experiments are to be made, to ascertain whether absorption would be entirely abolished by larger doses of cocaine.

On the Rôle of the Spleen in the Hemolytic Function.—The hemolytic activity of the spleen is always assumed, but has not often been conclusively demonstrated. For the purpose of throwing light on this question, L. Lapicque (Soc. de Biologie, 1902, p. 949) injected 35 to 40 grams of fresh blood per kilogram into normal and splenectomized dogs. In this manner the red blood cells were increased to nine or ten millions. It was found that after 10 or 12 days the number of red blood cells became normal, and this took place with equal rapidity in the splenectomized and the normal animals. Apparently the removal of the spleen interfered not at all with the hemolytic process. In normal animals the blood coloring matter resulting from the disintegration of red cells is found abundantly in bone-marrow and spleen, in small quantities in the liver, and not at all in the lymph-glands. After the removal of the spleen this material is most abundant in bone-marrow, is present in small amounts in the liver and in traces in lymph nodes. The hemolytic system is evidently widespread and the spleen forms but a small part of the whole.

Secondary Sexual Characters.—An experimental investigation of a subject that has for a long time been determined a priori as well as from observation of the results of surgical castration, has been conducted by A. FOGES (Pflüger's Archiv, Nov. 8, 1902), who draws the following conclusions: The development of the secondary sexual characters is dependent on the amount of the functional substance of the reproductive glands. The transplantation of portions of the testicles and their preservation in a healthy condition appears to succeed more readily in animals in which at least a portion of the testicles remains in the normal location. In animals, however, in which the latter is not the case, this transplantation also succeeds. The transplantation of testicles or ovaries from one animal to another, in the long run did not succeed. Completely castrated cocks with transplanted functional testicular tissues had the complete characters neither of the capon nor of the cock. From the above facts are to be concluded that the testicles have an internal secretion upon which the secondary characters of sex depend.

The Depressor Nerve as Reflex Nerve of the Aorta.—Both histological investigation and physiological experiment point to the aorta as the final aim of the depressor nerve, according to G. KÖSTER and A. TSCHERMAK (Pflüger's Archiv, Nov. 8, 1902). Any further relation of this nerve to the heart itself is not excluded by the results of the experiments, nevertheless the anatomical findings preclude such a possibility. The theory of Ludwig and Cyon concerned with the stimulation of the depressor nerve as the result of increased blood-pressure and with its regulatory function as a depressor nerve, has lately been strengthened by the discovery of Pawlow that during a state of exalted blood-pressure, the section of both depressor nerves causes a further rise in the pressure of the blood. The results of the authors that a rise of pressure in the intact arterial system, as well as artificially distending the isolated aortic arch by means of normal salt solution, is capable of stimulating the depressor nerve, is another argument in support of this doctrine. The authors believe that the point of stimulation of the depressor is the aortic arch and not the heart.

Oxygen and Muscle Metabolism.—The progressive loss of irritability in a surviving muscle, according to W. M. FLETCHER (Jour. of Physiol., Dec. 15, 1902) is markedly delayed by an abundant supply of oxygen. The advent of natural rigor mortis is delayed apparently indefinitely by the same influence, even when special means are taken to hasten it. These preservative actions of oxygen appear to be independent of the shape of the muscle and its surface relations, and no confirmation has been found of the view of Hermann that the action of oxygen on muscle-substance is twofold, one effective at the surface, and the other opposite in character, effective below the surface. The phenomena of fatigue resulting from active contractions in an excised muscle, are irrespective of its shape, diminution in intensity and rapidity of onset, mitigated by a contemporary adequate supply of oxygen, and marked recovery from the effects of fatiguing contraction may be seen in a muscle deprived of nutriment, but exposed freely to oxygen. The survival discharge of CO_2 from an excised muscle is increased during periods of contraction in the presence of abundant oxygen, the increase being proportionate or roughly so, to the number and degree of the contractions. In agreement with observations already published, this additional yield of CO_2 accompanying contraction is absent or incomplete in the case of a muscle made to contract in air or in nitrogen. It is suggested that the delay of rigor mortis and of fatigue effected by the presence of available oxygen, marks the completeness with which in the presence of oxygen, the dissociative processes alike of resting and active muscle, advancing slowly in the former and rapidly in the latter, result in the formation of free CO_2, and that the hastening of rigor mortis and fatigue in a muscle from which oxygen is withheld, are due to an increased accumulation under circumstances of deficient oxidation, of the metabolic products within the muscle which are the potential precursors of CO_2.

The Submaximal Electrical Response of Nerve.—Records of the submaximal electrical response of nerve evoked by single stimuli of a weak character were obtained by F. GOTCH (Jour. of Physiol., Dec. 15, 1902) by means of a capillary electrometer and compared with the maximal responses evoked by single maximal stimuli. Such records furnish the first direct proof of the fact that the active phenomena of a nerve trunk vary in magnitude within certain limits as the stimulus which evokes them varies in intensity; they also show that the rate of propagation of the excitatory wave is the same whether this is maximal or submaximal. Comparison of the submaximal with the maximal response shows that although there is an obvious difference in the amount of the electromotive force, there is little or no difference between such time relations as the moment of commencement, the moment of culmination of the production of electromotive force, and the rate at which this electromotive force disappears. Submaximal effects closely resembling those evoked by a weak stimulus applied to a nerve can be also obtained by exciting a portion of the nerve fibers which the trunk contains; even when the partial excitation is fully adequate for the part excited, the response evoked in the nerve trunk retains its submaximal character. Of the two conceivable factors which are concerned in the production of submaximal effects in nerve and muscle, that of the number of elements aroused appears to be by far the more potent; the other factor, that of graded intensity of actual effect in each individual element as dependent upon similar grading in the intensity of the stimulus, does not appear to be conspicuous and would not account for the identity of time relations. These experiments indicate as regards both muscle and nerve the obvious gradation in the intensity of active effect dependent upon intensity of stimulus, is mainly due to these tissues, being composed of a large number of elements having no physiological continuity with each other; when, as in cardial tissue, such continuity exists, there is no distinction between responses and no difference of maximal from submaximal stimuli.

Temperature Range in Ether Anesthesia.—It is a well-known fact, according to S. SIMPSON (Jour. of Physiol., Dec. 15, 1902) that chloroform, ether, alcohol, morphine, and other narcotics have the power of paralyzing the heat-regulating mechanism, so that a warm-blooded animal can no longer maintain its temperature and becomes for a time being cold-blooded. It is remarkable that an animal so high in the scale of homoithermism as the monkey should suffer no bad effects from having its temperature reduced to 14° C. (57.2°

F.) a fall from the normal of about 44° F. When the rectal temperature fell sufficiently low, from 25° C. to 23° C., a condition of what might be termed "artificial hibernation" was induced, and in this condition the animal remained and tended to take the temperature of the medium in which it was placed. It had no power of self-recovery and continued to sleep on until warmed by artificial means.

Effect of Lymph on the Coagulability of Blood.—An addition of lymph, from whatever source that lymph has been obtained, brings about a notable acceleration of blood-coagulation, according to A. E. Wright (Jour. of Physiol., Dec. 15, 1902). There can therefore hardly be any doubt that the acceleration of coagulation observed when blood has come in contact with the wound, or when a piece of muscle is introduced into shed blood, is an acceleration due to an admixture of lymph. The effect of the lymph is attributed to the coagulative albuminous element which is removed by clotting. The above phenomenon is seen in post-mortem examinations, it being quite common to see the blood suddenly coagulate on issuing from the heart and mixing with the pericardial fluid. It is also seen when one makes pressure on the tissues to drive the lymph into a bleeding wound. It is further seen in the phenomenon of Delezeme, when blood from a ruptured vessel exudes on to a raw surface which is bathed with lymph, such, for instance, as a weeping eczematous surface or the floor of an ulcer.

Snake Venom and Nerve Cells.—As the result of poisoning with the venom of the Australian tiger-snake, Basil Kilvington (Jour. of Physiol., Dec. 15, 1902) found the following changes in nerve cells: (1) Chromatolysis, the Nissl granules breaking into dust and ultimately all the stainable substance disappears; (2) the staining never becomes diffuse through the cell; (3) no swelling of the cell occurs; (4) the outline of the nucleus is lost, but it retains its central position as a rule; in the very worst cases the nucleus disappears; the nucleolus is usually distinct, though it sometimes appears loose in the cell; (5) the changes are very unequal in different cells; (6) the cells around the central canal of the cord show the earliest and most advanced degeneration; (7) with rapidly fatal doses no microscopic changes occur. The degree of these changes is dependent on the time the animal survives; (8) inflammatory and vascular changes are absent.

The Fate of Fat in the Organism.—The derivatives of nitrogenous bodies have been the subjects of many careful investigations in recent years, but authors have bestowed relatively little attention to the derivatives of the fats. The rôle played in the organism by one of these constituents, glycerin, is the subject of a study by H. Leo (Berl. klin. Woch., Dec. 8, 1902). The splitting of fat and the release of glycerin occurs in the stomach as the result of the action of a specific enzyme. This was shown to be the case by Volhard, whose experiments have been repeated with partial success by Leo. In the intestine, owing to the action of steapsin, glycerin must also be present after the ingestion of fat. A part of this glycerin is absorbed by the intestinal epithelium, but reunites with the temporarily freed fatty acid and resumes the form of fat molecules. But an appreciable portion of glycerin is absorbed as such; hence, while free fatty acids and soaps are often found in considerable quantities in the feces, glycerin is never present. On the other hand the chyle may include neutral fat after the ingestion of a fatty acid, showing that a synthesis with glycerin has taken place in the intestinal mucous membrane, and that glycerin is produced in the organism. Where this glycerin is produced is not definitely known. Intestinal disturbance is sometimes produced by a diet rich in fat. The question may be asked whether such disturbance is not due to the presence of large quantities of glycerin in the bowel. Leo believes this to be a plausible hypothesis, although he was unable to discover any glycerin in the feces of nurslings suffering from diarrhea. His failure to find glycerin he attributes to its absorption from the lower bowel after it has exercised its well-known irritating effect in the upper bowel. The normal urine contains no glycerin. If, however, an adult take by mouth 20 grams or more of glycerin, traces of glycerin begin to appear in the urine. In diseases characterized by rapid wasting and loss of fat, such as carcinoma and tuberculosis, the urine fails under ordinary circumstances, to contain any trace of glycerin. It might have been supposed that in these diseases a portion of the considerable quantity of glycerin released in the tissues would escape oxidation, but this does not occur. Leo sought in vain for glycerin in the urine of patients suffering from circulatory diseases accompanied by diminished oxidation. In febrile disorders the findings were the same, and in one disease only, diabetes insipidus, could glycerin be demonstrated in the urine. There is insufficient proof as yet to establish this latter finding as a characteristic and constant metabolic variation in this disease.

HISTOLOGY, PATHOLOGY AND BACTERIOLOGY.

Artificial Development of Parasitic Tumors.—By the injection of *Plasmodiophora brassica* into rabbits, W. Podwyssotzki (Zeitsch. f. klin. Med., Vol. 47, Nos. 3 and 4) was able to produce artificial tumors. They are mesodermal in origin and resemble perithelial, infectious granulomata. The spores of the germ are engulfed by the phagocytes and stimulate these to mitotic and amitotic division. The parasites themselves may coalesce so completely with the protoplasm of the cells that they can no longer be distinguished. The chief mass of the spores is destroyed within the phagocytes. A few of the spores will show signs of proliferating and some may be liberated and infect other cells. The original cell will then show empty capsules. Where the parasite has been killed before it is injected, such tumors do not result.

Pathology of Adams-Stokes Disease.—A very interesting case of Adams-Stokes disease has been observed by H. Luce (Deutsch. Arch. f. klin. Med., Vol. 74, Nos. 3 and 4). On autopsy, a sarcoma was found to involve the upper third of the septum of the heart. A very careful microscopical examination of the nerves of the heart proved that organic lesions of the septum can cause a severe, secondary, retrograde degeneration of both vagus nerves. A large part of the course of both vagi seems to lie in the septum. The peripheral vagus endings reach the muscle of the ventricles directly without the intervention of ganglia. As far as a trophic influence is concerned, the heart seems to be independent of the vagi. Bradycardia, in cases of bilateral degeneration of the vagi of central or peripheral origin, points to a muscular origin of this condition which is to be regarded as an altered functional state of the heart muscle. Insufficient nourishment, general dyscrasiæ, toxic, infectious and nervous influences of various characters may favor the development of bradycardia. Even the complete destruction of the upper third of the septum or its replacement by tumor tissue can be without influence upon the rhythm; in the case mentioned the tumor must have existed for a long time with a regular heart action. The Adams-Stokes symptom-complex may develop at every age and with every cardiac disease of organic or functional nature. The course is acute, subacute or chronic and recurrent. It may be curable. Arteriosclerosis need not necessarily be present. The nervous symptoms vary and depend upon the individual reaction of the central nervous system especially the medulla, on the slowed circulation owing to the diminished heart-beats. No characteristic set of symptoms belongs to tumors of the heart.

A New Bacillus of Angina.—The bacteria hitherto described as causing the ordinary non-diphtheritic angina, are of two kinds: either streptococci or the so-called fusiform bacillus. During an epidemic in a small German town a new germ has been encountered by H. BONHOFF (C'blatt. f. Bakt., XXXII, No. 12). Clinically the disease was marked by very severe general symptoms at the onset, such as fever up to 104° F., severe headache and malaise and difficulty in swallowing. The appearance of the throat did not stand in proportion to these signs, since there were only a few discrete spots on the tonsils and never a distinct membrane. After three to four days improvement set in and convalescence was rapid. A bacteriological examination of the throat showed that the disease was due to short bacilli occurring in threads of three to five. Motility was not present. The germs stained readily with Loeffler's solution, especially when warmed; Gram's method gave negative results. The question as to whether spores are formed, could not be definitely decided. On artificial media the growth is characteristic since it takes place only with higher temperature and is marked by peculiar folds when the cultures have attained some age. For animals the germ did not seem to possess much virulence.

Granules of Anthrax Bacilli.—By means of a peculiar reaction, A. DIETRICH and G. LIEBERMEISTER (C'blatt. f. Bakt., XXXII, No. 12) could demonstrate that the granules found in anthrax bacilli really serve to bind the oxygen for the cell. If the bacilli are suspended in a weak alkaline solution containing dimethylparaphenylendiamin and naphthol, naphthol blue will be deposited at the site of the granules, which shows that nascent oxygen is present here. Concerning the composition of the granules, no definite statement could be made since they proved singularly resistant to all solvents and chemical agents. It is probable, however, that they belong to the nucleins. Similar bodies were found in the diphtheria, typhoid, colon and tubercle bacilli and in the cholera germ. They were absent in the bacillus of malignant edema, the *Bacillus proteus vulgaris* and the *Bacillus prodigiosus.*

Pathogenesis of Leucemia.—According to the theory of A. PAPPENHEIM (Zeitsch. f. klin. Med., Vol. 47, Nos. 3 and 4) the large lymphocyte is the mother-cell of all other forms of white cells. Hence these lymphocytes are found in all forms of leucemia, even in the myelogenous type. Leucemic blood diseases are best divided into three clases: (1) Lymphocytic pseudoleucemia; depending upon a diffuse proliferation of lymphoid tissue in the glands or spleen or a circumscribed proliferation in the bone-marrow; (2) lymphocytic leucemia, where there is a diffuse growth of degenerated, lymphadenoid marrow tissue, and (3) mixed-cell leucemia, resulting from proliferation of normal, specific marrow tissue. It follows from this classification that every true leucemia is myelogenous in origin, and every pseudoleucemia, lymphatic or splenic. A myeloid pseudoleucemia does not exist. The blood-changes of leucemia do not necessarily depend upon a hyperplasia of the entire marrow; for the long bones may remain intact. The blood-changes constitute the most prominent characteristics of the disease, yet they are only one of its symptoms and an absolute diagnosis may be possible only from the microscopical examination of the marrow. Pseudoleucemia and lymphocythemia are similar in as far as they depend upon proliferation of lymphoid tissue, yet they differ in that the seat of the proliferated tissue varies in the two diseases. Besides the two typical forms of lymphocytic leucemia there are a number of atypical, intermediary forms in which mononuclear leucocytes occur in the blood and bone-marrow besides lymphocytes. Splenic anemia is distinguished clinically from pseudoleucemia by more severe anemia and secondary leucocytosis and myelocytosis with relative lymphocythemia.

Permeability of the Berkefeld Filter.—In determining the permeability of the Berkefeld filter, W. B. WHERRY (Jour. of Med. Res., Nov., 1902) found that the bacillus producing pneumonia in guinea-pigs will pass through the pores of a small filter, but not through a larger one, perhaps on account of the greater thickness of the walls, the relatively small amount of fluid passed through, and the somewhat diminished pressure. Nor did it pass through the Pasteur-Chamberland bougie. It is probable that these filters will be found even less efficient when very turbid, concentrated cultures are passed through. *Bacillus coli communis* did not pass through any of the above filters, and it and the organism from pneumonia in guinea-pigs grow through the walls of the Berkefeld filter very rapidly, through the wall of the Pasteur rather slowly. It seems justifiable to conclude that if the virus of a disease passes through the pores of the Berkefeld it is not necessarily ultramicroscopical. Further work with micro-organisms of various sizes might help in defining the size of the pores of such a filter and determine whether various filters of the same make have the same sized pores or not. It would seem advisable that workers should make a preliminary test of filters, by employing some such minute organism.

Hemolytic Potency of Certain Sapotoxins.—Of the sapotoxins and their allies, A. A. BRUERE (Jour. of Med. Res., Nov., 1902) has found quillaja-sapotoxin, cyclamin and saporubrin to be powerfully erythrolytic. Their potency depends (*a*) on their purity, (*b*) on the nature of the media in which they are dissolved; they are more active in hypotonic than in isotonic solutions; they are more active in aqueous solutions than in serum (*c*) on the presence of salts capable of affecting the permeability of the red cells. The sapotoxins liberate hemoglobin from the red cells, whether these be moist or dry; but they are without action on the stromata of red cells, fixed by formalin after drying at the room temperature, and of the red cells fixed by heat or by alcohol and ether. Acting as protoplasmic poisons they quickly kill the leucocytes, causing cessation of their movements and also exert a solvent action upon the granules of the granular leucocytes, but do not impair the staining properties of their nuclei. They do not inhibit the disintegration of the blood-plates in fresh blood, but they are without action on the plates after fixation. Finally, dissolved in blood-serum, they slightly delay the onset of clotting. Cholestrin plays no part in the neutralization of the sapotoxins studied.

Study of Eel-Serum.—Eel-serum, when injected into the veins of the rabbit or guinea-pig, has been found to be extremely poisonous by J. DE LISLE (Jour. of Med. Res., Nov., 1902). There is both an immediate and a remote effect, and rabbits resist the latter effect much better the the former, while with guinea-pigs the reverse is true. Immunization of the guinea-pig with eel-serum has not yet been attained, while with the rabbit it is a delicate, though usually successful task. The serum of a rabbit that has been vaccinated with eel-serum possesses antitoxic properties that neutralize the poisonous action of eel-serum. The latter can dissolve the blood-globules of the normal rabbit. The resistance of the blood-globules of a rabbit that has been vaccinated is somewhat higher than normal. The globules of a normal rabbit have the power to fix and neutralize the poisonous principle. This property is missed if the rabbit has been treated with eel-serum or eel blood-globules. This is one fact which proves that the antitoxine is produced by the red corpuscles of the rabbit. A rabbit vaccinated with the blood-globules of the eel produces a serum that gives a heavier precipitate when mixed with eel serum, than the serum of a rabbit that has been vaccinated with eel-serum. The serum of a vaccinated rabbit can dissolve the blood-globules of the eel in vitro. When an eel has been vaccinated with serum or globules of a rabbit, its serum will protect the normal eel's globules against the dissolving action of the hemolytic rabbit serum. Hence it follows that the organism of the eel has been excited by this vaccination to produce an antitoxin. Inasmuch as the red globules of a vaccinated rabbit offer a higher degree of resistance to the dissolving action of eel-serum than do the blood-globules of the normal rabbit and the inability of the blood-globules of a rabbit that has been vaccinated, to neutralize the toxic principles in the eel-serum, together with the non-production of the sensibilizing body, the author concludes that eel blood, when injected into a rabbit, excites the red globules of that animal to produce an antitoxin.

Transference of Bovine Tuberculosis to Man.—This important topic is by no means thrashed out, if we are to judge from the voluminous leading article by Dr. Robert Koch (Brit. Med. Jour., Dec. 20, 1902). As vigorously as ever he defends the view that human beings are rarely if ever infected directly or indirectly from cattle. A year and a quarter ago he issued to the Board of Education of Prussia a request that invitations be sent to the heads of the University clinics throughout Prussia asking them to put him in communication with such cases of primary intestinal tuberculosis as seemed to them to have incurred the disease through the use of the milk of cows suffering from Perlsucht. Heller in Kiel received a special invitation of this kind because very singularly it was reported by him that Kiel had 37 $^{8}/_{10}$ per cent. of primary intestinal tuberculosis in children. This, by the way, is almost one per cent. higher than the very high rate credited to Boston by Councilman. Up to date, however, Koch had received no case of primary intestinal tuberculosis, despite the far-reaching nature of the call for such cases. The author reviews the literature on the subject very fully, but fails to find that the cases reported are convincing when subjected to careful criticism. He says that those cases in which illness has been supposed to follow the ingestion of meat infected with Perlsucht, a large number of which have been reported, seem utterly without foundation. Ostertag, an expert on meat inspection, says: "Day by day an uncounted number of tuberculous organs come into the market and are consumed. It is only of very recent years, however, that the meat inspection has been at all rigorous, and there is no history of any epidemic which can be traced to such a source. In fact, many families, and even whole villages were found, when this matter was looked up, where tuberculous meat was known to have been eaten in great quantity without tuberculosis having occurred more frequently among them than elsewhere. As a result of these various investigations, the danger of Perlsucht is beginning to be thought much overestimated. At the Congress on Tuberculosis in Paris is 1890 and 1891, the complete exclusion of this type of meat was decided upon. In 1893 and 1898, however, a more rational path was chosen and the sale of the flesh of those animals in which the infection had been local was permitted. At the Seventh International Congress on Hygiene in London, the complete exclusion of tuberculous meat was unanimously set aside. Although the public, as a whole, labor under the impression that they safeguard themselves from infection by bovine tuberculosis, it is a clear case of deception, for although these people conscientiously boil their milk, it is usually only to the extent of scalding it in a wide-mouthed bottle for a short time, for milk, as is well known, is prone on the application of high heat, both to boil over and to scald. This does not kill the germs. It would seem, therefore, very strange to the author that if human beings could be contaminated from the cow's milk that whole communities should not at times suffer the profoundest infection. The fact, which has not been brought out in prominence at all is that the butter made from the cream of cows infected with Perlsucht very frequently contains living Perlsucht bacilli. As a rule, those who are most careful in boiling their milk give no thought to the butter which comes from the same source. In conclusion, Dr. Koch says that he neither could nor would contest the possibility that single cases may occur, but in order to be convincing he believes they should fulfil the following conditions: (1) Certain proof of tubercle in general and where possible of the primary focus must be supplied; in other words, in adults, the clinical symptoms must be unassailable. In children such symptoms are altogether too uncertain and recourse must be had for positive evidence to autopsy; (2) other sources of infection must be excluded with certainty and the question of heredity is of paramount importance. Along this line also should be mentioned the fact that other sources of infection must be carefully looked into, such as tubercle bacilli, which are frequently found round the nails of children; (3) the condition of the people who have partaken of the infected food with the patient and under like conditions must be ascertained; (4) the condition of the cow must be reported upon, it being altogether insufficient that the cow shall have suffered from Perlsucht in a distant organ. Tuberculosis of the udder is the only lesion through which the milk can be infected with the germs. The author has examined from these four standpoints the 28 cases which seem most convincing, from among the large number reported. He found that in only 10 cases had an autopsy been done and only seven of these were said to have had intestinal tuberculosis. In only three cases was it stated that the milk came from cows with tuberculous udders. In not a single case were the other possibilities of infection excluded. In no case was anything said about other people who had had exactly the same environment as the patient. Provisionally we can as yet only say that the injurious effects of milk infected with Perlsucht and its products are not proven. He would leave to the individual judgment the significance of this lack of proof as contrasted to the immensely frequent opportunities of infection. He repeated what he said in his London address, that the fight with tuberculosis, in order to succeed, must not catch at the straws which observation proved the whole problem of bovine infection to be, but deal with what is really the only source of infection, to wit: tuberculous man.

Hair Balls in the Stomach.—Only about 24 cases of this peculiar condition are recorded. In almost all of these there has been a failure of diagnosis during life and a consequent fatal termination. "In view of this it is highly probable," writes W. Saltau Fenwick (Brit. Med. Jour., Nov. 29, 1902) "that particularly among the insane, many of these cases, failing to be examined after death, are wrongly ascribed to peritonitis, and that the condition is more frequent than is generally supposed. Of the 24 cases recorded, no less than 23 were females, the youngest of whom was eighteen and the oldest thirty-four at the time of death. The mode in which these unfortunate young women filled their stomachs with hair is usually similar in all cases. It begins by her forming the habit of biting the ends of the hair, or possibly if she be a mother, of plucking hairs from her children's heads while playing with or ministering to them. One patient, it is recorded, would habitually clean her comb with her fingers and unwittingly put the bunch of hair into her mouth. The symptoms are nil until the concretion has reached a considerable size, and the capacity of the stomach has been materially diminished. Vomiting may not appear at any stage, even though the organ may be completely filled with hair, and the same is true of pain. As a rule, however, after a prolonged period of intractable dyspepsia, the patient experiences nausea and pain. This latter gradually becomes localized to the epigastrium and is increased by pressure. Vomit is scanty and acid, occasionally blood stained, but singularly enough it rarely contains hair. On physical examination, there is always, in cases far enough advanced to have subjective signs, a tumor which can be both felt and seen. It has been described as "kidney shaped," "crescentic" or, "like a spleen." Occasionally the stomach is so displaced by the weight of this mass that it may lie in the pelvis. The lower border is well defined and the tumor is hard and smooth. Unless there be ulceration accompanying it, palpation does not exhibit pain. One of the characteristic palpatory signs is the extreme mobility of the tumor, one being able to push it almost anywhere within reason. If ulceration has occurred, however, secondary adhesions may prevent this. The duration of the disease, of course, depends upon the amount of hair consumed, but it averages something like 15 years. Ulceration and perforation, or hematemesis or intestinal obstruction is the usual cause of death, but a large proportion die from exhaustion from the vomiting and diarrhea.

A Serum Specific for the Human Placenta.—In an investigation on the etiology of eclampsia Veit and Scholten had made the experiment of incorporating portions of the human placenta in the peritoneal cavity of the guinea-pig. Investigations on this subject have also lately been conducted by W. LIEPMAN (Deut. med. Woch., Dec. 18, 1902). He endeavored by the continuous injection of bits of placental villi into the abdominal cavity of rabbits to obtain a specific serum (antiserum?) in the same manner as is done in the preparation of other sera, such as spermatoxin, hemolysine, tyreotoxin, etc. Bits of placental villi freed from blood, were suspended in sterile normal salt solution and injected into the peritoneal cavity of rabbits at intervals of several days from five to eight times. Blood was abstracted a week after the last injection and the clot allowed to separate. Observations made with this serum showed that the addition of placental tissue bits caused cloudiness, whereas a sample of normal rabbit's serum remained clear. The cloudiness is usually apparent immediately or in some cases within half an hour if the specimen is placed in the incubator. Microscopical examination shows small albuminoid particles with precipitin characteristics and also intact villi with nuclei only visible after staining with hematoxylin. The relation of this serum to other substances was also investigated. With human blood only a slight hemolytic staining of the specific serum was noticed. Blood serum and tissue bits do not cause any immediate reaction, only a slight cloudiness can be noticed after prolonged incubation, and even then a distinction between this and the former reaction is plainly evident. It remains for the author to determine whether it is possible to demonstrate in this manner the presence of placental tissues in the circulation. This would prove of value in its bearing on the question of the migration of chorionic villi in pregnancy, in nephritis and eclampsia.

Bactericidal Action of the X-rays.—From experimental study of this subject, Dr. CIPOLLINO and V. MARAGLIANO (Gazz. Osped., Dec. 21, 1902) find that the X-rays have a decided bactericidal action upon micro-organisms of slight resistance, such as the cholera bacillus; but upon those endowed with greater resistance, such as the *Bacillus coli, typhosus,* and *prodigiosus,* the effect is much less marked. The authors hold it probable that with a greater intensity than that employed by them, a higher degree of bactericidal action might be obtained with the rays; and that the way for direct destruction of bacteria in infectious conditions might be opened up, by the penetration of the rays through the body tissues.

New Zealand as a Health Resort.—The value of this far-away land as a haven for rest is commented on by G. F. LYDSTON (Phil. Med. Jour., Jan. 10, 1903). New Zealand is almost as large as Great Britain and can be directly reached by steamer in three weeks. He believes that the country is not appreciated in America as it should be. The latitude is about that of France, Spain and Italy. The climate is ideal, the rainfall abundant and the soil fertile. The islands, three in number, are volcanic in origin and mountainous in their general aspect. On North Island is a belt of thermal springs about 150 miles long and 25 miles wide, consisting of innumerable geysers, hot springs, mud baths and mineral springs. There are numerous well-appointed spas and sanatoria, all under governmental control and supervision, and the rates are less than at any health resort within the author's knowledge. The mineral springs, with the exception of the sulphur, are usually saline, feebly alkaline and heavily charged with CO_2. Great claims are made for all of them in gastrointestinal, renal and hepatic disturbances. The hot baths, at 104° to 105° F. at Hanmer, one of these resorts, can be taken with perfect freedom twice daily for half hour at a time, which is in marked contrast to our own system at the Arkansas Hot Springs, where only a 7-to-15-minute bath at 94°-98° F. is allowed. The author believes that this is one of the most wonderful countries in the world, whether viewed from the standpoint of the physician or the lover of nature.

Relations between Lymphatics and Connective Tissue.—This subject, which has been debated for many years by numerous investigators, has been studied lately by W. G. MACCALLUM (Johns Hopk. Hosp. Bull., Jan., 1903), with idea of determining the relations between the lymph-channels and the surrounding tissues. He found that the lymphatics could be readily demonstrated by interstitial injections by means of a fine hypodermic syringe in the skin of embryo pigs. It has been stated that the lymphatic channels have not complete walls, but that they are in free communication with certain ramifying spaces in the tissue through pores in their walls (Saftkanälchen of v. Recklinghausen). From the author's preparations it appears, however, that the apparent spaces are cells whose outline has been stained with nitrate of silver which is also precipitated in the material lying between them. In edema of the tissues it was also found that the lymphatic vessels were sharply outlined and could not be distinguished from the normal. It is not evident therefore that tissue spaces are in free communication with the lymphatics. Sections cut parallel to the flat surface of the skin showed no pores or holes in the walls of the lymphatic vessels. Careful injections also demonstrated that a slight overdistention of the vessels caused irregular projection of bush-like tufts and by pressure of a coverslip all the injecting fluid could be pressed out of the lumena of the actual lymph channels, leaving the extravasations unchanged as a sort of blue fringe along the clear empty canals. This would not occur if these masses were in communication with that in the lymphatic by preformed channels. The anatomical evidence seems to show that the walls of the lymphatics, although delicate in the extreme and easily ruptured are still possessed of a complete endothelial lining which shows no pores or open communications with the surrounding tissues, but is practically analogous with the lining of the blood vessels.

HYGIENE.

The Misuse of Boric Acid.—In order to render boric acid really efficient as a food preservative, it is necessary to use powerful solutions. Liebreich showed that staphylococci could remain alive for ten days on a 4-per-cent. boric acid solution. W. Dosquet-Menasse (Berl. med. Woch., Dec. 15, 1902) found 3-per-cent. solutions useless for the preservation of meat. This writer takes issue with some of the later utterances of Liebreich, who in his earlier writings asserted again and again the danger of poisoning from the excessive use of boric acid. But aside from the question of the toxic effect of the strong solutions of boric acid now in common use, arises the question of the danger of concealing the real condition of meat in which putrefaction has actually begun. It is a safe general rule that every chemical antiseptic which is capable of destroying bacteria is bound so to alter meat as to render it less nourishing. Meat is changed for the worse even by that least harmful of all antiseptics, moist heat, provided the heat employed be of a sufficient grade and be long enough applied to destroy all bacteria. The only safe method of procedure is to abandon antisepsis in food preservation and to rely upon asepsis.

The Vaccination Controversy.—Some facts bearing on the vaccination controversy, drawn from the recent epidemic of smallpox in South Essex, are given by C. Fraser (Lancet, Dec. 20, 1902), as follows: It is necessary, at the outset, to define the terms used in the classification of the cases from their clinical standpoint, since their application is bound to be more or less arbitrary. In *mild* cases the eruption consists of a score of spots, more or less; the constitutional symptoms are slight and evanescent and rarely extend to the eruptive period. In the *discrete* type pocks are more numerous, but never touch each other. Any degree of coalescence brings the case within the *confluent* group, in which, for convenience, hemorrhagic cases are included. The following comparison of vaccinated and unvaccinated is noteworthy:

	Vaccinated.	Unvaccinated.
Mild	36 per cent.	8 per cent.
Discrete	45 per cent.	45 per cent.
Confluent	19 per cent.	47 per cent.

It will be seen that the proportion of mild cases is more than four times greater among the vaccinated than among the unvaccinated, while, on the other hand, the proportion of confluent cases in the same group is two and a half times less. The even distribution of discrete cases must, of course, be studied in the light of the case mortality of each group. In the vaccinated this is found to be 2.8 per cent., while in the unvaccinated it is 20.4 per cent. In the course of an inquiry into the reasons why patients had remained unvaccinated, one but seldom met with the story of ill-health in infancy. Unreasoning prejudice accounted for quite a considerable number of cases. Of interest, also, was an attempt to define reasons for neglect of revaccination. Procrastination played an important part, and its victims were not a few. There are still, however, persons who go about during an epidemic without being revaccinated, not for want of belief, but because of an ingenuous trust in marks many years old. If statements could be trusted, vaccination that was merely so in name, in that it proved a false sense of security, again and again proved a snare, and the proof came in the form of a very unpleasant surprise. That there is vaccination and vaccination is a fact which one would believe to be pretty widely known; but whereas, there are some persons who will point with assurance to almost invisible scars, there are others who declare that, inasmuch as vaccination of this quality has failed to protect, vaccination as a whole is an imposition. In this regard an analysis of the case mortality in regard to the efficacy of vaccination may be quoted. Owing to stress of work the recorded measurements of scars were incomplete and the number of insertions is therefore taken as the standard. There were 138 cases with one mark, with 23 deaths, or 16.6 per cent.; 144 cases with two marks, with 17 deaths or 11.1 per cent.; 214 cases with three marks with 19 deaths, or 8.8 per cent.; 361 cases with four marks, with 25 deaths, or 6.9 per cent.; and 271 cases in which the patients were unvaccinated, with 92 deaths, or 33.9 per cent. That the groups are larger in proportion to the number of insertions will doubtless suggest to the opponents of vaccination that the latter predisposes to smallpox. Patients with one, two, three or four vaccination marks were in hospital on an average of 27, 35, 33 and 32 days, respectively, the stay of the unvaccinated extended to 58 days. The early incidence of smallpox where protection has not been acquired is illustrated by the fact that of 198 persons under ten years of age attacked by smallpox, 47 or 23.7 per cent. were vaccinated and 151 or 76.3 per cent. were unvaccinated. It is hardly necessary to mention that the unvaccinated group in the first decade of life in the community is much smaller than the vaccinated. In the first decade the case mortality was but 6.3 per cent. in the vaccinated, as against 37 per cent. in the unvaccinated. In the subsequent decades the fatality percentages are, for the vaccinated 9.8 and for the unvaccinated 30 per cent. These figures are sufficiently relevant to the question of the modifying effect of the acquired resistance, even when it is below the immunity level. An analysis based on the extremes of severity of cases occurring in later decades demonstrated the gradual ebb of immunity. Thus in the second decade 44 of the vaccinated cases were returned as "mild" and 15 per cent. as "confluent." For the third decade the figures were respectively 33 and 17 per cent., and for subsequent decades 27 per cent. in both cases. The gradual loss of immunity is clearly indicated. Its retrogressive character is also clearly shown by the fatality rates in succeeding decades of ages. These work out at 6.3 per cent. for the first decade, and for subsequent decades, respectively 4.2, 8, 11.5, 19, 26 and 33 per cent. The percentage in the first decade represents three patients whose condition with regard to vaccination can only be described as eminently unsatisfactory and whose ages were respectively ten, nine and ten years old.

EYE, EAR, NOSE AND THROAT.

Permanent Hemianopsia Following Eclampsia.—Disturbances of vision are almost always accompanying symptoms of eclampsia, but compared to amaurosis, which is frequently observed in eclampsia, hemianopsia is a rare occurrence and has thus far been described but twice. H. WOODS (Maryland Med. Jour., Nov., 1902) reports a case with permanent left hemianopsia, and in explaining the possible causes of this condition alludes to several points in the etiology of eclampsia upon which little stress has yet been laid. In a forthcoming work by Dr. Williams upon obstetrics, uremia is not accepted as the basal or chief cause of eclampsia. Several years ago it was pointed out that hemorrhagic hepatitis was frequently found in certain eclamptic cases. More recent work has shown that lesions of the liver are more frequent and more characteristic lesions than those of the kidney. These consist of reddish or whitish areas scattered throughout the liver, but particularly marked in the region of the portal vessels. They are areas of necrosis and their formation is attributed to degenerative changes following thrombotic processes in the smaller portal vessels, and they can be found in over 95 per cent. of cases. Similar changes may be found in the brain, and it is supposed that eclampsia is probably due to some as yet unknown poison circulating in the blood which may give rise to lesions of varying intensity in the different organs.

Gonorrheal Iridochoroiditis.—The systemic character of gonorrhea has been proven in many cases by the demonstration of the gonococci in the blood, especially in cases of endocarditis and arthritis complicating gonorrheal urethritis. Inflammations of the eye are perhaps not so frequent, but that an iridochoroiditis may be due to this specific infection, is undoubtedly proven. C. S. BULL (Med. Rec., Dec. 20, 1902) reports five cases in which the lesion was characteristically that of gonorrhea. Inflammation of the uveal tract, due to this cause, develops much more rapidly than the ordinary rheumatic iritis and choroiditis and the plastic character of the inflammation is less pronounced, it being rather of a serous variety. It never seems to follow the urethritis immediately, but is invariably preceded by an arthritis usually of the knee-joint. The iritis or choroiditis is distinct from the ordinary type in being sudden in its onset, very rapid in its development, accompanied by severe pain and a rapid and complete loss of vision. Though the inflammatory process is obstinate and subject to frequent relapses, it eventually subsides and usually leaves no trace behind. There is almost never any gelatinous or fibrinous exudation into the anterior chamber and the main cause for rapid and marked deterioration of vision seems to be due to a general serous infiltration of the iris and choroid and a diffuse infiltration into the aqueous and vitreous humors. Synechiæ seldom occur, and if they do, they are easily broken. When the patient incurs another attack of gonorrhea, the iritis is again liable to manifest itself, but the disappearance of the iritis under appropriate treatment without leaving synechiæ proves the absence of the plastic character, and at once distinguishes it from the usual form of serous iritis. Leeches, atropine and hot fomentations with sodium salicylate internally, and an appropriate treatment for the urethritis are usually followed by satisfactory results.

Septum Perforation in Chromic Acid Factories.—It is a well-known fact that perforations of the septum of the nose are common in those who work in factories where chromic acid and the chromates are employed. J. BAMBERGER (Münch. med. Woch., Dec. 23, 1902) draws attention to the fact that no other part of the nose except the septum is generally involved, and explains this by the direction which the inspiratory current of air takes, so that the particles of caustic will come to lie directly upon the septum and there exercise their caustic effect. As soon as the perforation has taken place, the pains and coryza disappear at once. Those who are accustomed to snuff experience less of the bad effects, since their mucous membrane is already in a state of chronic irritation, and the increased secretion tends to wash the salt away.

GENITO-URINARY AND SKIN DISEASES.

Hydrocele.—This condition is quite common, and yet not always amenable to treatment. A radical cure by incision of the sac with the aid of the thermo-cautery is described by L. CAILLERON (La Sem. Méd., Dec. 3, 1902). The patient was thoroughly anesthetized, and an incision 2½ to three inches was made in the skin over the tumor, passing through the various layers, down to the tunica vaginalis, which is easily recognizable from its bluish color and from distention by the fluid. The next steps are pointed toward enucleation of the tumor by aid of fingers and scissors, from the neighboring tunica and the elements of the cord. When this has been done the pouch is opened, and while the assistant stretches the tunica, which is loose, it is excised by the thermo-cautery, heated to a dull-red heat. Of course, there is not the least loss of blood. The testicle, thus deprived of its parietal serosa, is mopped off with sterile gauze, wet with peroxide of hydrogen, and then replaced into the scrotum. The wound is closed by five or six sutures, which penetrate all the layers of the skin and subjacent tissues, so as to compress the vessels which may have been cut in the skin wound. The pain after this operation is nil, and at the end of eight days the superficial skin sutures, which finally closed the wound, and on the tenth day the retention sutures are removed. On the twelfth to the fourteenth day, the patient may return to his duties again.

Leucoplakia.—The first report of a case of leucoplakia which eventuated in cancer was made by Neligan in 1862. To earlier writers the disease is known as ichthyosis. The occasional induration of the patches suggested the name tylosis. Leucoplakia and leucokeratosis are later terms. The literature is reviewed by F. C. COBB (Bost. Med. and Surg. Jour., Dec. 11, 1902). There are both simple and syphilitic cases of "psoriasis" and in both leucoplakia may occur. Among irritative causes tobacco is the most effective. Fournier noted that in 65 non-syphilitic cases 64 occurred in habitual smokers. Among Leloir's 35 cases all but one were smokers. It is but natural that a constitutional disease like syphilis should produce effects in the mucous membranes which should lead to formation of scar tissue. Thus 80 per cent. of Fournier's cases had syphilis. It is doubtful if syphilitic leucoplakia is of the same character pathologically as non-syphilitic, but there seems no question that either may degenerate into carcinoma. In leucoplakia there occurs marked thickening of the epidermis, under which in the submucous layer is a great infiltration of small cells around the vessels. Between these layers is a pronounced granulative layer, consisting of five or six rows of cells filled with eleidin, and a not greatly altered Malpighian layer. In the second stage fissures form, going down to the Malpighian layer, which degenerates, showing granular colloid cells and numerous wandering cells. Sangster found vacuolation of the Malpighian layer and wide lacunæ taking the place of the papillæ. The thickening of the submucous layer is evidence of a more or less chronic process, while its infiltration by round cells suggests acute conditions or the exacerbation of chronic ones. Evidence as to treatment is conflicting. Cases treated by excision, papayotin, cautery, alkaline washes, and "let alone"—all are credited with successful results. On the other hand, many leucoplakias develop carcinoma despite all treatment. Among 10 cases at the Massachusetts General Hospital four developed carcinoma.

THE MEDICAL NEWS.
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THE BACILLUS OF DIARRHEA AND DYSENTERY.

IN view of the interest in the etiology of acute dysentery which has been recently aroused by the work of Shiga in Japan, Flexner in the Philippines and the United States, and Kruse in Germany, the paper in this issue of the MEDICAL NEWS, by Drs. Hiss and Russell, on an organism isolated from a case of enterocolitis, is of special importance.

Since in the determination of the etiological relationships of micro-organisms to disease processes many questions of broad practical significance, especially those relating to serum diagnosis and serum therapy, are involved, this paper should be studied by the clinician as well as the bacteriologist. Drs. Hiss and Russell isolated from the stools of a fatal case of diarrhea a bacillus which without the most careful study by experienced workers would have been reported as Shiga's organism. They were, in fact, only able to distinguish this organism by a difference in the acid production when grown in the presence of various sugars not commonly used in identifying bacteria. They believe that a description of their bacillus—apart from its connection with the case of dysentery, which may or may not be etiological—is of much importance, particularly since its agglutination in the true dysenteric serum, a test too often relied upon for the identification of an organism, might readily lead to its being confounded with the Shiga bacillus. Furthermore, these investigators suggest, and correctly, that subsequent use of a similar organism might give rise not only to confusion in determining the specific character of the disease, but to untoward results in the application of serum therapy. The determination of fixed differences in the fermentation of the various sugars by organisms heretofore considered identical—as shown by a comparison of Shiga's bacillus, Kruse's bacillus, Flexner's Manila culture, Strong's Manila culture and other organisms isolated in this country—demonstrates the fallacy in previous methods and obviously points out the necessity of a careful study along these lines of all organisms resembling the Shiga bacillus before the relationship of these organisms to the various forms of enterocolitis as known clinically and pathologically can be accurately determined and be of practical significance. It is more than probable that some cases have been wrongly attributed to the Shiga bacillus, and it may well be that too wide a distribution and significance has been given the true Shiga organism.

In addition to the uncertainty that has attended the use of curative sera in patients with typhoid, dysenteric and similar infections in general there arises from this work the question whether the homologous serum, viz., that secured from animals immunized against the bacillus—which is the excitant of the disease in the patient—was used in the cases reported to have been benefited or not benefited. The fact that these bacilli are so closely related in their agglutinating reactions complicates the making of accurate early diagnosis, but this will doubtless be obviated by bacterial examination of the stools. In the event of serum therapy proving an efficient means of treating dysenteric infections, the determination of the bacterial excitant in each case is obviously of paramount importance, unless it should be found that for practical purposes the curative sera were interchangeable.

THE NUCLEINS IN THERAPEUTICS.

NUCLEINS are now employed therapeutically in many forms and in numerous diseases, and there is rational foundation for their use. The physiological rôle of these substances is certainly an important one, and the therapeutic application of nucleinic compounds has for its object the direct supply to the human organism, in assimilable form, of substances which ordinarily are acquired indirectly through the medium of the circulating leucocytes. The biological and chemical facts relating to this subject are well stated in a recent communication by A. Martinet (*La Presse Méd.*, Dec. 20, 1902).

The rôle of the white blood cells in the assimilation of nutritive substances was long ago established; more recently experiments have been made which show the singular and important function of these cells in the absorption and modification of medicaments. In 1880 Selmi observed that when a non-fatal dose of arsenious acid is given to an animal, a large part of the arsenic passes into the organism in the form of an organic compound and is excreted in that form in the urine; at the same time there appears in the urine an excess of phosphorus in the form of an organic base. Arsenic evidently takes the place of phosphorus in organic combination. Besredka showed that when arsenic is introduced subcutaneously, whether in soluble or insoluble form, it is absorbed by the leucocytes exclusively, while not a trace can be found in the other elements of the blood. The arsenic taken up by the leucocytes passes into nucleinic combination and in this form reaches the nuclei of the cells of the nervous tissues. The saving quality of the intermediation of the leucocytes is shown by the fact that if arsenic be placed directly in contact with the nervous centers, it is found to be one hundred times more poisonous than when injected subcutaneously and absorbed and modified by the white blood cells.

According to an early generalization of Claude Bernard the cytoplasm of cells is the seat of the phenomena of disintegration or vital expenditure, while the cell nucleus is the center of organic synthesis—the agent of the conservation of vital energy. Both leucocytes and the nuclei of fixed cells—the former important for defense and assimilation, the latter important in synthetic processes—are composed principally of nucleins. Of the solid part of leucocytes, nucleins constitute 78 parts per 100; and they are found well represented in the cells of the liver, the spleen, the lungs, the testes, the ovaries, the nervous tissues and the thymus, predominating everywhere as agents of growth, of development, of reproduction.

The chemical study of the nucleins is clearly of capital importance. It is impossible here to restate fully the opinions of Miescher, Altmann and others. Suffice it to say that analysis shows that nucleins consist of an albumin more or less lightly combined with nucleic acid, the latter being very rich in phosphorus. For a study of metallic combinations with nucleic acid we are indebted to Schwickerath, who, working with nucleic acid derived from yeast, obtained combinations by gradually adding a fresh solution of metallic oxide to a slightly alkalinized aqueous solution of the acid. The addition of an excess of alcohol to such a preparation yields a voluminous precipitate of nucleic acid chemically combined with mercury, silver, copper or iron, as the case may be—substances to which Schwickerath gives the generic names mercurol, argol, cuprol, ferrinol. Kossel has found among the products of decomposition of nucleic acid members of the pyramidin series (pyramidin, thymin, xanthin, hypoxanthin, adenin, guanin). This may perhaps explain the increased elimination of uric acid which follows the ingestion of substances rich in nucleins, inasmuch as there is a close chemical relationship between uric acid and members of the pyramidin series, xanthin and hypoxanthin in particular.

Among current remedies, glycero-phosphates and lecithin may be classed as essentially nucleinic. The use of organic preparations of arsenic is in harmony with what is now known of the action of leucocytes, rich in nuclein, upon inorganic preparations of arsenic. It is highly probable, according to Hartung, that iron is transformed by the leucocytes into ferruginous nucleinic combinations before it can be utilized by the organism. Blood serum, freed from corpuscular elements, is bactericidal owing to the nuclein which it contains, Hahn's experiments showed that the germicidal power of serum can be largely increased by the administration of yeast nuclein. The value of beer yeast in the treatment of sepsis due to staphylococcus, is explained by the wealth of nuclein which beer yeast contains. Vaughan reports that in tuberculosis moderate injections of nuclein cause a fall of temperature, and Aulde recommends nuclein in anemia, digestive disorders and in acute and chronic pulmonary affections. Aulde also suggests that nuclein may be useful in typhoid fever, in which disease the activity of the leucocytes is diminished. While the indications for the employment of nucleins are not thoroughly clear, knowledge of their physiological rôle suggests the conditions in which they can best be utilized, and evidence of their value in such conditions is rapidly accumulating.

MEDICAL LEGISLATION AND THE FEMALE.

THE following idiotic bill has been introduced into the Assembly of the State of New York. Its provisions we give entire:

AN ACT relating to the treatment and care of female patients in hospitals and elsewhere, and for the protection of the honor and morality of such patients.

The people of the State of New York, represented in Senate and Assembly, do enact as follows:

Section 1. That it shall be unlawful for any student, attendant, house physician and surgeon, or anyone else, to expose the body or person of any female patient, in any hospital, medical college or elsewhere, in the State of New York, for any purpose other than the performing of an operation necessary for the recovery, or relief from pain, of said female patient.

Sec. 2. That when it shall be deemed necessary for such operation to be performed, the parents and sisters and brothers, or such of them as shall be living, or in case none shall be living, the guardian or next friend designated by such patient shall be notified at least twenty-four hours before the performing of such operation, and at least three of such persons so notified shall be allowed to be present in the operating room, during the entire performance of such operation, and until said patient shall be removed from said operating room and replaced in her bed until she recovers her sense; except, when in case of accident the notification herein required may be dispensed with, if an immediate operation shall be deemed necessary by the authorities in such hospital or medical college. In case such notification shall be dispensed with no person or persons other than immediate relatives or guardians or next friend of such female patient so to be operated upon, shall be permitted to witness such operation or any part thereof.

Sec. 3. Any person or persons convicted of performing, or attempting to perform, or who aid by their presence or otherwise in the performing of an operation upon a female patient, except as permitted herein, shall be deemed guilty of a felony, and the punishment thereof shall be by a fine of not less than one hundred dollars and not more than five hundred dollars, or by confinement in a county jail or State prison for a term not less than one year and not more than five years, or by both such fine and imprisonment.

Sec. 4. This act shall take effect immediately.

Comment on this is unnecessary.

ECHOES AND NEWS.

NEW YORK.

New Superintendent for Mt. Sinai Hospital.—Dr. S. S. Goldwater has this week been appointed Superintendent of Mt. Sinai Hospital. His duties begin April 1.

St. Mary's Free Hospital.—The recent opening of the new parts of St. Mary's Free Hospital for Children marks an added development in the hospital system of our city. Beginning 31 years ago with a small dwelling house which was rented from year to year, this institution has grown until it now has 100 beds and an ideal equipment. The hospital plot abuts on Thirty-fourth Street, Thirty-fifth Street and Ninth Avenue. In 1900 a model of one of the wards was sent to the Paris exposition and a gold medal was accorded to it, and since that time through a bequest which was received from the late Mr. Charles A. Contoit, additions have been made to the Hospital on the same basis of construction and the older parts of the building reconstructed so as to harmonize with the newer parts. We wish every success to this excellent institution which is doing so much to give health and comfort to the children of the poor.

The New Rockefeller Institute for Preventive Medicine.—The location of the new Rockefeller Laboratory, accounts of which have appeared in the news recently, will be the three blocks from Sixty-fourth to Sixty-seventh Street, Avenue A to the East River. This is a portion of the famous old Schermerhorn farm, which was purchased by Peter Schermerhorn (known to genealogists as Peter the Younger) in the early part of this century. The streets, Sixty-fifth, Sixty-sixth and Sixty-seventh, though officially upon the city map, have never been opened. The city has not taken title to the land, and there will probably be little difficulty in arranging with the city for the transfer of jurisdiction to the trustees of the proposed institution. The new laboratory grounds, therefore, according to present plans, will cover three city blocks, though none of the building details are forthcoming. The price paid for the land is in the neighborhood of $700,000. The size of the plot indicates in a measure the magnitude of the enterprise Mr. Rockefeller has in view. The property is admirably adapted for its intended use, lying as it does high above the water opposite Blackwell's Island, at a point directly north of the new Blackwell's Island bridge piers, and commanding a fine outlook up and down the river. It is said that work upon the new buildings will be begun about the first of May.

Bellevue Alumni.—The fiftieth anniversary of this society was held Feb. 4, and was a delightful occasion. The following, with a magnificent silver service, was presented to Dr. Gouley:

DOCTOR GOULEY.

By Poet Laureate Dr. R. K. *Air:—Mr. Dooley.*

There is a man that's known to all, a man of great renown,
A man whose name is on the lips of many a man in town,
They speak about him every day, you've heard his name no doubt,
And if he ever sneezes, they will get an Extra out.

Chorus:

For Doctor Gouley, for Doctor Gouley,
The smartest surgeon this land ever knew,
Always proficient, ever efficient, is
Doctor Gouley-oo-ley-oo-ley-oo.

See him at the Hospital with bright and earnest face,
Explaining to the House Staff the aspects of each
case,
His patients never can forget, nor will they ever rue,
The way he used to treat them in the wards of old
Bellevue.

Chorus.

And at his operations with verbiage exact,
He lectures to the students on surgery in fact,
The way he cuts for Calculi and removes them by
the score,
Makes every patient wish he had, at least one dozen
more.

Chorus.

Kings County Medical Association.—At its recent meeting Feb. 10, Dr. Arthur C. Brush read a paper on the Etiology of Tabes.

The Society of Medical Jurisprudence.—The One hundred and seventy-first regular meeting was held Monday, Feb. 9. The paper of the evening was entitled Adulteration of Drugs and Laws Relating Thereto, and was read by Prof. H. W. Wiley, Chief of the Division of Chemistry, U. S. Department of Agriculture, Washington, D. C.

PHILADELPHIA.

University of Pennsylvania.—Dr. S. Weir Mitchell will deliver an oration Feb. 21 at the Academy of Music of Philadelphia on "George Washington In His Letters."

Medical Instruction to Railroad Employees.—Authorities of the Jefferson Medical College have offered the various railroads entering Philadelphia a free course of training to their employes in first aid to the injured. Railroad officials have taken kindly to the suggestion and it is probable that a course of lectures by the staff of the College will be given to trainmen.

Phipps Institute Opened.—The temporary quarters of the Phipps Institute for the treatment of tuberculosis was opened on Monday, February 9. Improvements are yet incomplete, but about 30 cases registered for treatment. The dispensary will be open each day from 11 to 12 A.M. Within two weeks the Institute will be thoroughly equipped and the work well under way. Under Dr. Lawrence F. Flick, as Director, are Drs. Joseph Walsh, A. H. Hatfield, and J. Willoughby Irwin as assistants.

Congenital Cyanosis.—This case was exhibited by Dr. Joseph Sailer. The patient is a girl of twelve years, the cyanosis being first noticed at the age of four. She is a fairly well developed girl. The gums bleed easily, and dyspnea is present as is also frontal headache. The lips, end of nose, and tips of fingers are bluish, the mucous membranes are dark purple. The extremities are cold and there is clubbing of the fingers and toes. Heart sounds give no definite clue to lesion of that organ. The radial pulses are strong, equal, and rhythmical. Blood counts show 8,875,000 erythrocytes, and over 100 per cent. of hemoglobin. Skiagraphs of the chest show that the heart is moderately enlarged both to the right and left and on the right side apparently reaches to the level of the first rib.

Case of Possible Splenomegaly.—Dr. A. A. Eshner exhibited this patient at the meeting of the Section on Medicine of the College of Physicians Feb. 9. He is a laborer in a tannery, nineteen years of age and an alcoholic. His history is that of recurring abdominal pain, chills, fever and jaundice. The spleen and liver are markedly enlarged. No palpable glands are affected. Hemoglobin and erythrocytes are reduced, as are also the leukocytes. Malarial organisms were found in the blood but disappeared under hypodermic injections of quinine. The case is thought to be possibly one of hypertrophic cirrhosis with splenomegaly due to the use of alcohol. The case may be summed up as one with enlargement of the spleen and liver and some of the symptoms of splenic anemia. Dr. J. A. Scott said the cause of the condition was not clear as two factors had to be considered, first, repeated malarial infections, and second, alcoholic debauches twice a week for at least three years. He would attribute it to a mixed cause, the enlargement of the organs being due to alcohol and the present tenderness due to the repeated infections.

Cause of Polycythemia in Cases of Congenital Cyanosis.—Dr. H. A. Hare asked for an explanation of the polycythemia and high color index in these cases, mentioning the theory advanced by some writers that it was due to the effort of nature to thus supply the tissues with oxygen. In reply Dr. Alfred Stengel said that this theory of the intention of nature to furnish oxygen by producing more corpuscles he considered to be on the same basis as the opposite one of explaining the condition of an increased length of life of the red corpuscles. Both are mere speculations. He believes the high count is caused by centrifugalization of the blood. The count from the toes of such persons is often 15 per cent. higher than from the finger when raised as high as possible. The corpuscles are held in the tissues of the parts and the plasma goes on. The condition is analogous to that found when the extremities have become chilled. When a healthy person's hands are cold the blood count may show 6,000,000 red cells when 4,000,000 is the normal number for the individual. This emphasizes the point that blood counts are only of relative value. As to the lesion in the case under discussion Dr. Stengel said that of the cases of congenital cyanosis accompanied by heart disease that lived to the age of fourteen or more, 90 per cent. had pulmonary stenosis. This case did not show signs of that lesion and he considered it one of patent septum ventriculi.

Bilateral Bony Anchylosis of the Temporo-Maxillary Articulation of Traumatic Origin and Its Surgical Treatment.—At the Philadelphia Academy of Surgery, Feb. 2, Dr. W. J. Roe, by invitation, read a paper upon the above subject and presented two cases upon whom he had recently operated. The condition is believed to be always the result of a fracture into the joint and may therefore be looked upon as a sequel to that injury. Both patients shown were about eighteen years of age. The first had bilateral anchylosis as a result of catching his chin on a wire fence when coasting at the age of eight. Several attempts had been made under ether, to break up the anchylosis, none meeting with success. The mandible was small and there was marked fulness over the articulations. Operation was performed on one side at a time, with an interval of one week between. A mass of callus, the condyle and the neck of the mandible were excised. There was no bone between the articular surfaces but a bridge of bone extended between the mandible and zygoma. There was no trouble with breathing when the second anchylosis was divided and the jaws separated. The patient now can open his mouth a distance of one and one-fourth inches and has considerable lateral motion.

Respiratory Embarrassment When Mandible Is Loosened.—The second patient received his injury by falling 14 feet, striking his mouth, when five years old. There was the same recession of the chin and fulness over the articulations as seen in the preceding case. The operation was practically the same as the first and almost exactly the same condition of the parts was found. Some difficulty in respiration ensued and when the jaw was loosened this became marked. Efforts at restoration of breathing became urgent and finally a quick laryngotomy was performed. One hour afterward the wound was closed. The jaw was forcibly opened only half way at this time because of the respiratory difficulty. The results are practically as good in the last as in the first case, considering the time that has elapsed after each. The latter patient can now open his mouth one inch and has but slight lateral motion. The question of asphyxiation is an interesting one as the two patients were of the same age and physical condition, and the same precautions and technic were used in each. Dr. Roe believes that asphyxiation in these cases depends on the mechanical conditions present. The abnormal position of the tongue and larynx will be more marked the earlier the mandible is injured. The three years difference in the age of the patients at the time of injury made considerable difference in the position of the parts, the hyoid bone and attachments being displaced downward and backward. To prevent the complication in question, operate soon after injury in children, anchylosis occurring after the patient has reached maturity not giving rise to this abnormal configuration of the parts. The clinical history of the patients if carefully elicited may help the surgeon anticipate respiratory difficulty at operation. In the case under consideration, the patient had been accustomed to sleep with his head well extended and in addition snored very loudly. Asphyxiation should be treated by restoring the mandible to its former position, lifting the hyoid bone from the pharyngeal wall by means of a tenaculum, or as a last resort, do tracheotomy. To avoid this complication do not separate the jaws by means of a mouth gag when the last anchylosis has been divided. Sufficient stretching of the parts can be secured without its use, which may be quickly followed by asphyxiation.

Etiology and Treatment of Bony Anchylosis.—Dr. Roe considers these two cases of value as illustrating the true etiology of the condition in question. There is a fracture of the neck of the mandible and consequent slow denudation of the periosteum of the zygoma. Anchylosis between the bones then results. A misleading symptom in these cases is a slight mobility of the mandible. In the first case the incisor teeth could be separated one-tenth cm. and in the second case three-tenths cm. This movement is due to the springing of the bone and does not signify a movable joint. Dr. Roe prefers to operate on one side only at a time, taking the worst side first. This is believed to materially lessen the danger of infection which is apt to occur in one side while the other is being operated upon. The final result will depend largely upon the condition of the muscles of the parts, hence they should be injured as little as possible. The new formation of bone after operation is to be little feared. Anchylosis after fracture is best prevented by the use of an interdental splint.

CHICAGO.

Annual Report of the Alexian Brothers' Hospital.—The Alexian brothers' annual report of the work of their hospital at Belden and Racine avenues shows much charitable work has been done. In 1902, 2,981 patients were nursed in the hospital, 1,912 being dismissed as cured. Of the 305 who died, 122 were taken to the hospital in a dying condition. Of all the patients treated 1,681 paid the fees, 397 paid according to their means, and 903 were nursed free. City ambulances took 693 accident victims to the institution. According to religious profession 1,610 patients were Catholic, 1,172 Protestant, 54 Jewish, and 145 professed to no particular creed. Of the total number 1,764 were single men, 833 married, and 384 widowers. The nationality of the patients varied greatly, 961 being Americans, 8 Armenians, 56 Austrians, 6 Belgians, 10 Bohemians, 43 Canadians, 3 Cubans, 41 Englishmen, 4 Frenchmen, 141 Greeks, 889 Germans, 6 Hollanders, 3 Hungarians, 293 Irishmen, 34 Italians, 151 Poles, 18 Russians, 225 Swedes and Norwegians, 13 Scotchmen, 2 Spaniards, and 66 Swiss. The brothers wish to express their gratitude to the doctors of the medical and surgical staffs and to all benefactors.

Case of Inversion of the Uterus of Sixteen Months' Standing; Replacement by Anterior Colpotomy and Anterior Uterotomy, with Recovery.—Dr. Reuben Peterson, of Ann Arbor, Mich., read a paper on this subject before a recent meeting of the Chicago Gynecological Society. The patient was an American, aged twenty-six, and married three years. Her family and personal histories were negative. Her menstruation first appeared at the age of twelve, and up to the time of her present trouble was entirely normal. Her first confinement occurred about fifteen months before her entrance to the hospital. It was an easy labor, and was terminated by forceps, the instruments being applied only about five minutes. The patient did not remember about the delivery of the placenta and felt nothing give way. She flowed very profusely and was given presumably ergot. She stopped flowing soon after the completion of labor, and there was no further hemorrhage until the seventeenth day, at which time she had been up and about the room for a week. Two weeks later she consulted her physician, who told her there was something wrong with the uterus. He made a number of unsuccessful attempts "to fix it." Dr. Peterson saw the patient soon after this. Vaginal examination disclosed a typical inverted uterus, with rather a small fundus, situated about one and a half inches within the introitus. High up in the vagina could be felt the cervical lips, forming a complete collar or rim at the extremity of the uterus. The inverted uterus was grasped with the volsella and pulled forcibly outward and downward. Another volsella caught the anterior vaginal mucosa in the median line just above the anterior lip of the cup and pulled it sharply upward. Through the vaginal mucosa thus made tense, a horizontal incision was made some two and a half inches in length. To avoid opening the bladder, the incision was made as close to the cervix as possible. The vesico-uterine peritoneum was opened, and the cervix exposed. A volsella was placed on the anterior lip to either side of the median line, and the cervix incised between. This incision was carried upward in the anterior median line of the uterus to within one-third inch of the fundus. The inversion was now easily reduced, the fundus going upward and each half of the divided cervix being carried through half the arc of a circle and finally meeting, so that the two halves formed a complete cervix situated downward, not upward. He now adopted the suggestion of Taylor, and removed a wedge-shaped piece of the bulging uterine wall on either side of the incision. This was done to enable the retracted edges to come together. The uterine incision was next closed by a continuous catgut suture. The needle was passed from the peritoneal surface down to, but not through, the uterine mucosa. There was some gaping in one or two places, in spite of the utmost care to bring together the peritoneal edges. An unsuccessful attempt was made to close in the spaces by interrupted sutures, but the stitches tore through the uterine wall when much tension was placed upon them. A catgut suture was passed around each round ligament close to the uterus, and each end passed through the anterior vaginal wall and tied, after the fundus was returned within the pelvic cavity. This brought the defectively sutured line of incision up against the bladder peritoneum, at the same time giving support to a fundus which had been prolapsed for months. A small strip of gauze was placed to the left of the median line between bladder and uterus, and another small gauze drain was left in the uterine cavity. The lateral vaginal incisions were brought together about the cervix after the peritoneum was sutured to the uterus, except about the opening, where the gauze drain protruded. The most interesting feature of the case was the sudden rise of temperature and pulse within twenty-four hours after the completion of the operation. Was this due to a sudden absorption of necrotic material from the replaced uterine mucosa? Or was it due to leakage into the pelvic cavity through the imperfectly sutured uterine incision? The author thinks the first supposition is the correct one. The symptoms were typical of a sapremia, and the condition of the patient was at no time dangerous. It was too soon for septicemic symptoms to develop from a leakage through the uterine incision. If the rise in temperature was due to absorption of leakage, improved technique in the form of removal of a larger wedge-shaped piece would remedy this defect. Vaginal fixation of the round ligaments, he believes, is an improvement over the ordinary technic of the operation. It prolongs the operation only a few minutes, and effectively holds upward and forward the relaxed fundus, and acts as a splint to the uterine incision by holding the latter against the bladder peritoneum.

Prostatectomy: Its Indications and Technic.—Dr. G. Frank Lydston read a paper on this subject before a recent meeting of the Chicago Medical Society.

After speaking of the preparation of the patient, the author says that when the patient is placed upon the table for operation, the surgeon should understand that the correct method of operating will be governed largely by the character of the tumors. It is well to advise the patient before operating of the possible necessity of operating suprapubically.

The exigencies of the case may, in exceptional instances, be indicated by the preliminary use of the cystoscope. While this instrument adds to the accuracy of diagnosis, its use simply enhances the dangers of subsequent radical operations through the shock, traumatism and sepsis incidental to the exploration. In many cases of prostatic disease, in which a radical operation is absolutely necessary, the chief danger to the patient is from shock, acting reflexly upon the kidneys, to which is added the further danger of anesthesia. The patient should be prepared with a view to doing, not only perineal prostatectomy, but suprapubic section, if necessary. Shaving and antisepsis should be scrupulously carried out. Chloroform should be the anesthetic of election. The patient being placed in the lithotomy position, a medium-sized sound is introduced into the bladder and given into the hand of the assistant. An inverted Y-shaped incision is made in the perineum, the longer arm of the Y corresponding with the median raphe of the perineum, and the short arms traversing the region just in front of the anus. It is sometimes advantageous to make the lower incision curvilinear instead of Y-shaped. The length of the lower arms of the incision, or of the crescent, as the case may be, should be modified by the conformation of the perineum, which should be longer as the perineum is shorter, deeper and more fatty. The triangular flaps involved in the incisions should embrace all the tissues down to the muscular structure of the urethra. The triangular flaps, having been dissected up cleanly, so as to expose the outlines of the urethra clearly, should be everted and fastened to either buttock by a single strand of medium-sized silk traversing its free angle. Careful blunt dissection downward along the urethra to the apex of the prostate must now be made, the rectum and the tissues in the ischio-rectal fossa being pulled down strongly by a retractor in the hands of an assistant. If sufficient room cannot be obtained in this way, it can be increased greatly by resecting the coccyx. As the dissection is being made, the assistant, using the sound as a lever, its convexity being directed perineumward, pries the prostate down into the wound as much as possible. Where the prostatic tumors are of moderate size and quite circumscribed, it is sometimes possible to enucleate them without opening the urethra. It is sometimes advisable to do this, unless the condition of the bladder be such as to positively demand drainage or intravesical work. Even here a retained catheter may be better than a perineal drain. Where a single prostatic tumor exists on one or the other side, an attempt should be made to enucleate it without opening the urethra, unless there be some positive indication for the latter procedure. A free incision in the capsule of the prostate is rarely necessary. The author finds that the best plan is to make a puncture with a pair of strong scissors. The puncture is enlarged by opening the blades of the scissors; the dilating finger of the operator does the rest. In some instances an incision of this kind should be made upon either side. Where opening the urethra seems advisable or unavoidable, the prostatic retractor shown by the author will be found exceedingly useful. An opening is made upon the staff at the apex of the prostate. Through this incision the prostatic urethra and neck of the bladder are thoroughly dilated with the finger so far as may be. The prostatic retractor is now inserted closed, and under the guidance of the index finger in the bladder opened in such a manner that its convexity rests upon the lower segment of the bladder. The sound is, of course, removed before the neck of the bladder is dilated, and the retractor inserted. An intelligent assistant has now command of the situation. The slim wire shank of the instrument, while it is a guide, in a certain sense, to the enucleating finger, does not encroach by its bulk upon the field of operation. In some cases it is found impossible to pass a rigid staff into the bladder. Under such circumstances, one of two procedures may be resorted to: (1) A gum elastic catheter may be passed as a guide; (2) the urethra may be opened in the apex of the prostate upon a staff which can be readily passed down to this point. In enucleating the prostatic overgrowth, it should be remembered that in some instances damage may be done by overzealousness in the attempt to remove all the adventitious tissue. No circumscribed overgrowth should be spared, but it should be understood that there is more or less diffuse tissue hyperplasia surrounding the tumors proper, and secondary to them, which it is both dangerous and unnecessary to remove, as it shrinks down readily when once the offending tissue has been extirpated. All distinct intumescences should be removed. Where enucleation is not practicable, morcellement with cutting forceps is required. He emphasized the fact that in any instance in which the tumors are removed by incisions from the mucous side, either through the urethra or bladder, the ideal perineal operation is distinctly debarred, and the operation reduced to the same plane, essentially, as that occupied by suprapubic cystotomy and intravesical extirpation of the prostatic overgrowths. Where the tumors are more or less polypoid in character, or, if sessile, are situated very high up, their bulk being distinctly intravesical, it is occasionally necessary to combine suprapubic cystotomy with the perineal method, and remove the tumors under consideration from above.

Syphilis.—Dr. Max Heichmann presented a boy, ten years of age, who, according to the history given by the mother, at the beginning of October, 1902, showed an ulcer in the left angle of the mouth. This was followed by an extensive swelling of the submaxillary gland of the same side, and six weeks afterwards by sore throat. The boy was treated at the Cook County Hospital for two weeks, after which he left the institution. Then an eruption on the forehead began to manifest itself. No other skin manifestation was noticed previously or afterwards. There are five other children in the family, but the existence of a similar affection is denied by the mother. Questions relating to tuberculosis and other diseases were answered in the negative. The mother suspects that the boy may have contracted the ulcer in the angle of his mouth from another child, inasmuch as it is the habit among the children in the neighborhood where she lives to chew on the same piece of candy. In the left angle of the mouth, the seat of the former ulcer, a scar is visible. Large cervical glands can be felt on the anterior upper part of the neck. Chains of small and large glands in the cervico-occipital region can also be felt. There is no other glandular enlargement which can be detected. The skin of the body, with the exception of that of the forehead, shows no lesions. The mouth is free; the left tonsil shows a whitish-gray cloudy hue. On the forehead is an irregular distribution of ham-colored, slightly elevated, papules of lentil size, which show upon their surface an accumulation of fine scales. No itching is complained of. The author bases his diagnosis upon the following facts: (1) The ulcer in the angle of the mouth, followed by indolent great enlargement of the submaxillary gland on the same side; (2) sore throat; (3) still persisting indolent enlarged glands of the cervical region; (4) the appearance of the left tonsil; (5) the character of the eruption on the forehead.

CANADA.

Vaccination in Montreal.—Montreal is slow to pass a by-law providing for compulsory vaccination in that city. At a meeting of the City Council held Feb. 2, a letter was read from the secretary of the Quebec Provincial Board of Health to the effect that unless the City Council of Montreal hurried up and passed a by-law for compulsory vaccination that the Provincial Board would be compelled to take steps to provide for same under the authority of the Provincial Statutes. When the letter was about to be referred to the Hygiene Committee, Alderman Ames, the chairman of that committee, informed the Council that that body had already recommended a by-law. After this the letter was contemptuously tabled.

The Medical Mission to Labrador.—After an absence of two years, Dr. Wilfred T. Grenfell, the Medical Superintendent of the medical mission to Deep Sea Fishermen in Labrador and on the coasts of Newfoundland, is again in Montreal and Toronto, lecturing on his work in that isolated portion of the Dominion and appealing for funds to prosecute it more successfully. This mission, which is of a purely medical character, seeking to reach those cases of sickness which cannot possibly be reached by any regular practitioner of medicine, was inaugurated in 1892 by English philanthropists. In that year 900 patients were treated; last year the number attended reached 2,774. Dr. Grenfell is assisted by two doctors and two trained nurses in his work. There are three hospitals located in different settlements which have twenty-four endowed cots. In addition to this there are two hospital ships to ply along a coast line some 1,500 miles in extent. One of these was donated by Lord Strathcona and the other by a lady of Toronto. The population of the mission is 30,000. Last year it cost $20,000, of which amount $2,000 was contributed by Canadians.

The Tuberculosis Campaign in Montreal.—The Montreal League for the Prevention of Tuberculosis met last week and appointed a special committee to arrange a scheme of campaign. Dr. A. J. Richer and Dr. A. G. Adami will serve on this committee. The following are the officers of the league: President, Senator George A. Drummond; Vice-Presidents, Sir William Hingston and Dr. E. P. Lachapelle. Dr. J. George Adami was named as chairman of the Executive Committee.

McGill Students in New York.—The New York Graduates Society of McGill University, held a meeting on the evening of the 30th ult., when the following officers were elected for the ensuing year: President, Dr. Wolfred Nelson; First Vice-President, Dr. James Albert Meek; Second Vice-President, Dr. Hiram N. Vineberg; Secretary, Mr. R. A. Gunn. On the same day there was organized in New York, the University of Toronto Club under the presidency of Mr. George H. Ling of Columbia University. President Loudon of Toronto University was present at the banquet held in the evening. The McGill graduates in Chicago and the West have formed a society in that city with Dr. St. John as president. A big rally of the sons of McGill will be made in Montreal in 1904, the occasion being the celebration of the seventy-fifth anniversary of the founding of McGill.

GENERAL.

American Medico-Psychological Association.—In accordance with a resolution passed at the Richmond meeting in 1900, the American Medico-Psychological Association has become affiliated with the Congress of American Physicians and Surgeons, and is now a constituent member of that body. Under the by-laws of the Congress it is required to hold a meeting every third year in Washington. This being the year for such meeting, the council has instructed the secretary to announce that the Association will meet in Washington instead of Providence. The dates for the Congress are May 12, 13, and 14, and our Association will continue in session on the

15th. Members of the American Medico-Psychological Association will receive programs from the general Secretary and announcements from the Committee of Arrangements of the Congress. The profit and pleasure of the meeting will be very much enhanced by the new affiliation. Sessions of this Association will be so arranged as not to conflict with the program for the general meeting. Some of the titles sent are as follows: Treatment of Morphine Habits by Hyoscine, by Dr. J. M. Buchanan; Report of a Case of Cerebral Lues, by Dr. J. E. Courtney; Dementia Precox, by Dr. A. R. Defendorf; Report of a Case: Was He a Paranoiac? by Dr. C. A. Drew; The Toxemic Basis of Certain Brain Diseases, by Dr. W. E. Dold; Some Observations on the Insane: Blood Pressure, by Dr. W. R. Dunton, Jr.; Blood Conditions of the Insane, by Dr. H. C. Eyman; Psychology of Epilepsy, by Dr. Everett Flood; Delusions, Hallucinations, and Illusions of the Pudic Nerve, Cerebrospinal Areas, by Dr. C. H. Hughes; An Epidemic of Typhoid Fever Due to Impure Ice, by Dr. R. H. Hutchings; The Physiological Demands in Hospital Food Supply, by Dr. W. H. Kidder; Insanity in the Negro, by Dr. J. F. Miller; Paranoid Dementia, by Dr. C. W. Page; Drill for Patients, by Dr. G. A. Smith; How Dr. Brigham Met the Challenge to Diagnose Insanity at Sight, by Dr. Stephen Smith; Pathology of Acute Delirium, by Dr. H. A. Tomlinson; The Paranoiic Forms of Manic-depressive Insanity, by Aug. Hoch, M.D.

A symposium on the subject of Trauma and insanity is contemplated. Papers are also promised by Dr. H. E. Allison, Dr. G. A. Blumer, Dr. A. E. Brownrigg, Dr. H. C. Baldwin, Dr. L. L. Bryant, Dr. Edward Cowles, Dr. J. B. Chapin, Dr. E. P. Chagnon, Dr. Edward French, Dr. G. H. Hill, Dr. Robert B. Lamb, Dr. P. L. Murphy, Dr. I. H. Neff, Dr. A. B. Richardson, Dr. B. T. Sanborn, Dr. W. P. Spratling, Dr. C. G. Wagner.

Medical Society of the Missouri Valley.—The spring meeting of this association will be held in Council Bluffs, Iowa, on Thursday and Friday, March 19 and 20. The membership of this society includes the representative men of Iowa, Nebraska, Missouri, Kansas, North and South Dakota, and the meetings are always interesting and profitable to those who attend. A feature of the first day's session will be a symposium on Syphilis, and on the second day a symposium on Typhoid Fever will be presented. The following papers have been promised: Hereditary Syphilis, R. C. Moore, Omaha, Neb. Syphilitic Immunity; or Second Infection, A. C. Stokes, Omaha, Neb. Syphilis as Affecting the Nervous System, F. E. Coulter, Omaha, Neb. Congenital Syphilis in the Newborn and Young Infants, Mary Strong, Omaha, Neb. Affections of the Eye Due to Syphilis, W. B. Lemere, Omaha. Treatment for Relief of Nasal Reflexes, with Report of Cases. F. W. Dean, Council Bluffs. A Study of a Case of Dual Personality, S. Grover Burnett, Kansas City, Mo. Embryology, Histology and Pathology of the Eye (illustrated), Flavel B. Tiffany, Kansas City, Mo. Report of Uses of X-ray in Chronic Eczema, Acne, Cancer, etc., W. L. Kenney, St. Joseph, Mo. The Psychologic Factor in Medicine and Its Application to Nervous Diseases, John Punton, Kansas City, Mo. A Few Cases of Loss of Cornea from Neglected Dacryocystitis, D. C. Bryant, Omaha, Neb. Orthopedic Surgery, Bloodless, Non-bloodless and Mechanical, Jas. W. Cokenower, Des Moines, Ia. Some Cases of Cured Appendicitis, Harry H. Everett, Lincoln, Neb. Diagnosis of Diastolic Heart Sound, LeRoy Crummer, Omaha. Insanity and Tuberculosis Following Typhoid, and Report of Two Unusual Cases, F. E. Walker, Worthington, Minn. Diseases Simulated by Typhoid Fever, D. T. Martin, Pomeroy, Ia. Diphtheria, O. C. Kessler, Ravenwood, Mo. Regular program will be issued March 1st. Titles should be sent to the secretary not later than February 15, as the program is limited to twenty-five papers. A cordial invitation is extended to the profession.

Obituary.—Dr. Earle E. Woolworth died in the Cumberland Street Hospital, Brooklyn, last week, of injuries received on Jan. 21, when he was thrown from his carriage. His skull was broken. Dr. Woolworth was born in Lyonsdale, N. Y., in 1872. After graduating he spent a year in practising in the City Hospital on Blackwell's Island and then moved to Brooklyn. He was married on May 7 last. He lived at 864 Sterling place. Dr. Woolworth was a member of various fraternal societies, as well as a member of the University Club.

Dr. Thomas N. DeBowes, one of the founders of St. Mary's Hospital in Brooklyn, died at his home, 429 Clinton street, Brooklyn, on Saturday night. He was born in 1833 and was a graduate of Trinity College at Dublin, Ireland, of the New York Medical College and of Yale University. In the Civil War Dr. De Bowes served as surgeon in a Connecticut regiment. He was an autopsy surgeon in the old city of New York for fifteen years. He leaves a daughter.

After an illness of about two weeks, Dr. John Homans, the eminent surgeon and physician, died Feb. 7, at his home in Beacon street, aged 66. In his profession few men were better or more widely known than was Dr. Homans. In surgery especially he had gained great prominence. Dr. Homans was born in Boston. Not only was his father a physician, but his grandfather, John Homans, also was engaged in the practice of medicine and surgery and was a surgeon in the Revolutionary War, performing service at the battle of Bunker Hill.

Dr. J. Frank Valentine, surgeon of the Long Island Railroad, died last week in his home in Richmond Hill. He had been ill for four weeks from typhoid fever, complicated with heart trouble. Dr. Valentine was 45 years old. He was born in the Seventeenth ward in Brooklyn. He was a graduate of the New York College of Physicians and Surgeons. He had been surgeon for the Long Island Railroad about thirteen years. He was a Past Master of Greenpoint Lodge No. 403, and Past High Priest of Altair Chapter No. 237, Royal Arch Masons; a Past Eminent Commander of St. Elmo Commandery No. 57, Knights Templar; a trustee of the joint board of Greenpoint Masonic Temple; a Grand Representative of the Grand Commandery of the State of New York to the Grand Commandery of Louisiana, Past Illustrious Potentate of Kismet Temple of the Ancient Arabic Order of Nobles of the Mystic Shrine, and represented that body at the annual session of the Imperial Council at San Francisco last July.

CORRESPONDENCE.

A TYPHOID FEVER SERUM EXPERIMENT.

To the Editor of the Medical News:

Dear Sir: I have been experimenting with a serum in cutting short or aborting typhoid fever. The serum was obtained from a person who had recently had typhoid by raising a blister on his back, about two ounces of serum being secured.

Two or three drams of this serum were injected into the typhoid patient with the result of lowering the temperature from one to four degrees. The injection was repeated on the two following days, temperature becoming normal in from 24 to 72 hours after the first injection.

The average duration of temperature in ten cases was ten days. Several of the cases had a temperature of 104° F. on the seventh day of the disease. In none did the serum fail to reduce the temperature. Convalescence was rapid and uneventful.

F. L. MORSE, M.D.

Pueblo Colo., Jan. 28. 1903.

SOCIETY PROCEEDINGS.

SOCIETY OF DERMATOLOGY AND GENITO-URINARY SURGERY.

Stated Meeting, held December 12, 1902.

Geo. K. Swinburne, M.D., Chairman *pro tem.*

A Case of Lupus Vulgaris.—Dr. H. Goldenberg presented this patient for Dr. Leviseur. The patient had been presented at a former meeting. She was cured by electrolysis, but the condition recurred upon the discontinuance of the treatment. Dr. Leviseur hoped to show her again at some subsequent meeting with her condition again cured by electrolysis.

Dr. H. Goldenberg presented this case which he had only seen yesterday for the first time. He had had trouble with his tongue since 1896. The man was married and had had children. No specific history could be obtained. He believed the lesion to be a gumma of the tongue, although there was absolutely no specific history. He had been under no treatment.

Dr. Lilienthal thought it was a syphilitic lesion and, on account of its location, he advised that the man be kept under careful observation and, with the first sign of any recrudescence of symptoms, the part should be excised and examined. Dr. Goldenberg said he had made a diagnosis of syphilitic glossitis and he also thought of the possibility of its being an epithelioma. He said he would first place the man on salicylate of mercury injections, six in number, and if no improvement followed he would adopt the suggestion made.

Case of Parasitic Affection of the Lip.—Dr. H. H. Whitehouse presented a negro, male, thirty-four years of age. The eruption began nine years ago on the center of the upper lip and gradually extended the entire width of the lip. After three years it healed spontaneously in this region, but extended around the corners of the mouth to the lower lip, across which it spread, and has remained to the present time, between five and six years. He states, however, that the disease almost entirely disappears during the summer. He denies syphilis and has never had any other affection of the skin. At present the upper lip is covered with small scars at the site of the eruption, the first three years of its existence. The entire lower lip is covered with crusts which extend beyond the vermilion border to the mucous membrane; this bleeds very readily. From each corner of the mouth the disease spreads downward in the form of two oval-shaped raised warty patches about an inch in diameter, painful as the least movement breaks the surface and causes it to bleed.

Drs. G. T. Elliot and Goldenberg suggested making an examination of the secretions for blastomyces. Dr. Whitehouse believed the condition to be a parasitic affection of the lip. Whether any blastomyces were present or not he did not know, but would accept the suggestions made and have an examination made. Histologically the lesion had been examined, but nothing had been found. The fact that it began on the upper lip, and the length of time it had existed made it a peculiar growth. He thought it might be both a streptococcic and blastomycotic infection. He said he would make a further report later.

Axial Rotation of the Penis.—Dr. James Pedersen presented a young man who had been unfortunate enough to have a mysterious malformation of his penis. The glans penis was rotated on the body of the penis, so that practically the meatus stood horizontally, the rotation being to the left. This malformation led to an unhappy act by a practitioner and an uncomfortable error. In doing an internal urethrotomy the practitioner failed to note this rotation to the left and, in using the dilating urethrotome, he dilated the meatus in its narrow diameter and drew the blade completely out bodily in order to enlarge the meatus and divided the structures along the dorsum. The result was that he made a deep slash into the substance of the glans penis and set up a violent hemorrhage. Both the patient and the doctor then had a very unhappy time until finally the doctor placed his patient in a cab and took him to Bellevue Hospital, where he was received by Dr. Love, the house surgeon. Upon separating the lips of the wound there was found a spurter. The part was packed and a small catheter passed by the packing. The patient was kept at rest for forty-eight hours. Then when the patient urinated and the part washed out without any return of the hemorrhage, it was thought that this was an end of the matter. But at the end of a few hours the hemorrhage again started up. Packing was again tried, but at the end of a week the hemorrhage not being controlled, an external urethrotomy was done. The wound in the glans penis was sutured, taking as deep stitches as was possible, and it seemed to him as though he took up the bleeding point, but even with the bandaged urethra at rest a venous hemorrhage occurred from the deeper part of the wound, which he thought must have invaded one of the corpora cavernosa. After packing for a few days the hemorrhage was controlled. He presented the patient as an illustration of an interesting malformation. The patient was not a so-called bleeder.

Dr. Forbes Hawkes thought the rotation might probably be due to his urethral stricture; it seemed to him as if the whole penis was twisted. Dr. H. H. Morton was reminded of two cases of operation upon the floor of the urethra, in which the bleeding was persistent, almost uncontrollable, but was finally stopped by the use of the endoscopic tube and using pressure and counter-pressure. It was a mystery to him why the bleeding should continue so, and he thought that possibly the artery was only partly cut through. Dr. Lilienthal at first thought that the stricture might have been the cause of the malformation, but on questioning the patient, it seemed to him improbable, because the patient would have noticed that change in his anatomy; therefore, he was inclined to think that it was, after all, an anomaly. Dr. Swinburne thought that the hemorrhage was rather unusual, even though the incision be made in that portion of the canal that they were not in the habit of incising. The hemorrhage was greater than what was usually encountered. Even in cases of hypospadias in operating through the glans penis, he did not get such hemorrhage. Dr. Pedersen said that in doing hypospadias operations, the incision was made in the median line. In all operations upon the genito-urinary tract, if the incision be made in the median line, there would be a minimum amount of hemorrhage. The incision in the patient presented was in the substance of the glans and at right angles to the median line. He had only seen one case of hemorrhage following a meototomy at the internal commissure and pressure readily controlled it. Dr. Bangs had related to him a case in which he had been called in consultation. The hemorrhage was from the deeper portion of the penis, and it was controlled by the use of the endoscopic tube and counter-pressure being made by bandages. He firmly believed that he had to deal with a true anomaly; that the practitioner, after introducing the dilating urethrotome, did not carefully examine, and so he failed to note that the corpora cavernosa were not in their proper position. This was a case of true axial rotation. The raphé followed such an irregular course that it tended to corroborate his belief.

A Case of Syphilis of the Lip.—Dr. James Pedersen presented this patient, who had entered the wards of Bellevue Hospital with an ulcer on the upper lip. He spoke no English and, therefore, a complete history was impossible except through an interpreter. One and a half years ago he had a sore on his penis which lasted 2½ months. What treatment was given he did not know. Two and a half months ago a pimple, so the patient expressed it, appeared, it became crusted and he picked it with his finger, and it suddenly increased in size. When the patient entered the hospital it was about twice the present size. There was a thick crust, covered by a mucous discharge, which came from beneath the crust, where were found pale, sloughing granulations. There was some edema, but very little inflammation or induration. The question of diagnosis was raised. The condition shown was that reached after the most vigorous antisyphilitic treatment. About one week ago Dr. Pedersen presented this patient to the University Clinical Society and epithelioma was readily excluded and there remained a doubt as to whether it was tuberculosis or syphilis; they then did not have any history to guide them. One or two gentlemen thought that it was tuberculosis; the others did not. With a history to guide they made a tentative diagnosis of syphilis, and the result of the vigorous antisyphilitic treatment had, he thought, cleared up the diagnosis. There was a marked absence of induration in the lesion.

Dr. Lilienthal did not know what it was, but he was inclined to believe it was a syphilitic lesion. It could not have been an epithelioma, because the patient was getting better. Dr. H. H. Morton thought it was a precocious gumma. Dr. E. L. Cocks thought the patient was too young to have an epithelioma. Dr. Whitehouse thought it was a gumma with a mixed infection. Drs. W. B. Brown, Kingsbury and Goldenberg thought it was a gumma.

A Case of Dermatitis Medicamentosa.—Dr. W. B. Brown exhibited this woman, who had presented herself to the Demilt Dispensary for treatment. She had been unfortunate in her marital relations and had contracted gonorrhea. For this she was advised by her friends to take some so-called "neurotic drops." Over the body was found an erythematous rash. The patient did not feel badly and had no nausea. The doctor thought these drops contained some balsam copaiba or oil of turpentine. The whole trunk was covered and there were a few lesions upon the face and lower extremities.

A Case for Diagnosis.—Dr. H. Goldenberg presented a boy, about twelve years old, who had been under observation since last April at the Mt. Sinai Dispensary. The whole of his forearm was in a state of deep ulceration. There was a spina ventosa on one side and a loss of one of his phalanges. Also he had an osteomyelitis and osteitis of one foot. When he first saw the boy he thought he had to deal with a case of tuberculosis, but because of the outline of the disease and because the boy mentally was not normal, he thought probably it was a syphilitic lesion, and the boy was placed upon injections of salicylate of mercury, eight in number. The ulcerations healed. The patient returned in October in a condition not as bad as before, but much worse than when last seen. He was again placed on injections of salicylate of mercury, four in number, without the slightest improvement. This patient had also been presented to the Harlem Medical Society as probably a tuberculous syphilide. Dr. Lapowski thought it was a case of blastomycosis, while Dr. Goldenberg did not think so; he had a piece excised and examined. From the bone lesion he was inclined to believe that he had a case of syphilis combined with a tuberculous lesion. The father and mother are well and have had a number of children. This patient has had no Hutchinson's teeth or keratitis.

Dr. T. G. Lusk thought it was both syphilitic and tuberculous. Dr. Whitehouse said it was almost impossible to give an absolute opinion, but he thought it was syphilitic. The treatment he had received he did not believe militated against that diagnosis. He advised more vigorous treatment. Dr. Goldenberg said that the differential point had been made by Levine, that when there was multiple spina ventosa it was not specific. Syphilitic osteomyelitis was usually found in more than one toe or finger. Dr. Kingsbury believed that it was a case of combined tuberculosis and syphilis and said that better results could be had from the iodides than from the mercury preparations. Dr. E. L. Cocks said it was a mixed infection and advised good general treatment, such as cod-liver oil. Dr. Morton thought it was a case of tuberculosis. There were no Hutchinson's teeth or keratitis. Dr. Lilienthal thought the lesion was a syphilitic one. The microscope could teach us something as to its nature, whether tuberculous or not. Dr. Elliot believed it to be syphilitic. He did not place much reliance upon such a statement as made by Levine, nor did he take much stock in family histories in such cases, and so far as the treatment was concerned, that was rudimentary. He had seen a case of syphilis under treatment two or three years, the salicylate of mercury being given. Another case of a syphilide, now under his observation, had been present eight years and the patient had been given many things, hypodermic injections, iodide of potassium, mercury internally, baths at Aix-la-Chapelle and other places and without any marked effect whatever. Cases of hereditary syphilis demanded the iodides and phosphate of iron, outdoor life in the country and good hygiene to get good results. Dr. Swinburne agreed with Dr. Elliot regarding the improving of the general nutrition. He did not think that if the child should improve under cod-liver oil treatment that it should militate against its being syphilis. Dr. Goldenberg said the fact that he had placed the patient under vigorous antisyphilitic treatment showed that he had considered it originally a syphilitic lesion. He intended to administer tuberculin and see if he could get any reaction. He would accept the suggestions made and place the patient under vigorous treatment with iodide of potassium and the syrup of the iodide of iron. He could not make any change in the patient's hygienic surroundings on account of the parents being so poor.

A Case of Prurigo.—Dr. Goldenberg presented this patient whom he had seen for the first time only last week. He thought it was a typical case of prurigo.

It first struck him that prurigo in a boy of thirteen years, who had had it since he was two years old, should be accompanied with more infiltration than was found. The extensor surfaces were as much affected as the flexors. There was slight glandular enlargement. There were some lesions on the back which looked like lichen scrofulosorum.

Dr. Kingsbury thought it was simply a case of chronic eczema with a dermatitis resulting from the treatment. Dr. Whitehouse could see no evidence at all of prurigo. He thought the lesion upon the face would improve if Lassar's paste was applied, or some soothing treatment. Dr. Lusk said that it was only an eczema which might follow a dermatitis. Dr. Cocks said that the patient might have had prurigo, but there were no evidences of it now. He thought it was a case of eczema. Dr. Brown believed the same. Dr. Goldenberg said he presented the case because of the interest attached to its being eleven years in duration. When he first saw him he had a true case of prurigo. It was rather unusual to see a case of eczema last eleven years.

Specific Phlebitis.—Dr. H. Goldenberg presented this patient, who was twenty-nine years old, married, two children, no miscarriages and who had been sick about two years on account of an eruption upon the left lower extremity which had existed from six to nine months. Upon the inner surface of the left leg there was an induration in the cutaneous and subcutaneous tissues, of bluish color, not ulcerated. There were a few smaller nodules situated over the gastrocnemius muscle. When he first saw her the lesion had the appearance of erythema nodosum; but upon closer examination the diagnosis of phlebitis was made. The eruption itself was not ulcerated and he thought he had to deal with a case of erythema nodosum. Under specific treatment the eruption disappeared, although there was no history of any syphilitic lesion given. About six months ago an eruption developed which corresponded to the superficial saphenous vein and about four weeks ago two or three typical gummata were found. He presented the case as one of specific phlebitis, a disease quite rare. Broksch has collected but 32 or 34 instances of it.

Dr. Lilienthal did not think that Dr. Goldenberg had proven his case of phlebitis. He thought it might as well be a case of specific lymphangitis; a phlebitis going on to such an extent would have been accompanied with abscesses, or even hemorrhages. Also, the site of the lesion was not over the superficial saphenous vein, nor any vein of any considerable size. Dr. Elliot thought it was making a very fine diagnosis between phlebitis and lymphangitis, and he did not see how they could differentiate them from a diffuse gumma. Dr. Lilienthal called attention to the fact that the patient had not complained of any edema at all, and if there had been such a considerable inflammation of the vein, there must have been some trouble with the return circulation. Dr. Goldenberg said that there was no doubt but that the patient had phlebitis. He wanted to prove it histologically, but the patient was pregnant and would not allow a piece to be excised.

A Case for Diagnosis.—Dr. T. G. Lusk presented an interesting case seen last spring with a sycosis which involved both the upper and lower lip, which, under the proper treatment with sulphur and mercury, disappeared within a few weeks. He was then advised to apply the same treatment now and then. In September he returned and the lower lip presented a peculiar appearance with deep seated nodules or papules over it. Various treatments were used without good results. There was no pustulation around the hair follicles; the condition was very superficial. Still he epilated and followed it with an application of 10-per-cent. trikresol. Reaction followed, which was quieted somewhat by the application of ichthyol. He made a tentative diagnosis of blastomycosis. He was then placed on iodide of potassium, 10 drops three times a day, and without any improvement; this treatment has only been carried out for one week. Two smears of the superficial pustules were made and the pathologist stated that he found bodies like those in regular blastomycosis. He is now making cultures, and he believes that he will succeed. The case was presented for diagnosis and for suggestions as regards treatment.

Dr. Whitehouse said that clinically he could recognize nothing except simple sycosis in the lesion on the chin. Dr. Kingsbury agreed with Dr. Whitehouse. Dr. Brown thought it was a case of sycosis of the papillomatous type. Dr. Goldenberg thought the case one of sycosis and said that too much stress should not be laid upon the microscopical findings in blastomycosis. A case seen by him four or six weeks ago looked like it, and the smears from the purulent discharge made the pathologist say at first that there were a few yeast-buds, but later it was found to be nothing. Dr. Elliot made a diagnosis of sycosis. He spoke of a papillomatous growth which might be removed by electrolysis. He thought there was a question whether it was an accidental infection with yeast spores and this, by no means, was proven. Dr. Lusk said there was no question about the case being one of pure sycosis last spring which, under treatment, disappeared. But in September the lesion was twice as large as now, with papillomatous tumors perhaps the size of a pea or smaller and which resembled the lesion upon the back of the head, keloidal in character except it was softer. There was no pustulation about the deep follicles. He thought it was probably a blastomycotic infection on top of the other.

Lupus Erythematosus.—Dr. H. Goldenberg presented this case of a woman, forty-two years old, married nineteen years, with one miscarriage. She had been under treatment during the past five or six years. He presented her as a case of lupus erythematosus on the lip and mucous membrane. At one of the first meetings he presented a case with similar affection of the mucous membrane which Dr. Elliott remembers. That case has been on antisyphilitic treatment ever since. He thought that this condition of the mucous membrane was most interesting.

Dr. Elliot did not see how it could now be called a case of lupus erythematosus. Dr. Whitehouse regarded it as one of lupus erythematosus. Dr. Goldenberg said he had had her under observation for five or six years for this interesting thickening of the mucous membrane. This is the third case he had had in which the mucous membrane had been affected, and in the former cases his diagnosis had been doubted. Any specific trouble could be excluded in this instance, for he had had her under mixed treatment for two or three years. She had been directly under his observation and, in spite of the treatment, new eruptions appeared.

Case for Diagnosis.—Dr. H. H. Whitehouse presented John G., sixty-six years old, who had an eruption which began seven years ago. There was first a small red patch which slowly enlarged to its present size, about three inches in diameter. There has never been any ulceration nor any considerable swelling. He complained only of soreness. While under treatment the past year smaller lesions have appeared on the lower legs and on the wrists. There was no history of syphilis or other skin trouble. Behind the right knee was an indurated patch, dull purplish-red in color, of an irregular oval shape, with the central portion slightly depressed and a hard raised border. The upper part was broken and bled slightly as the result of treatment he had had, but ordinarily the patch was always dry and quite smooth, there being but slight tendency to scale. The lesions on the lower legs were small, slightly infiltrated red patches of quite indefinite character without scaling or subjective symptoms. The redness of these patches disappear considerably under pressure. Upon the flexor surfaces of the wrists the eruption is of the character of an erythema in patchy form; the remainder of the cutaneous surface was exempt.

Dr. Elliot said that he had treated this case for a long time for syphilis. He thought the diagnosis was an open question, although he did not see how any other diagnosis than one of syphilis could be given at the present time. The patient seemed to be particularly susceptible to the iodides and the internal administration of mercury. Mercurial plaster had been applied when the man was under his case with a certain amount of improvement. When he first saw him there was a central sinking in, and the area was quite small; now it was quite large. Dr. Goldenberg was inclined to make the diagnosis lupus erythematosus. Drs. Cocks and Brown agreed with Dr. Goldenberg. Dr. Kingsbury thought it was a case of syphilis. Dr. Whitehouse said the patient could not stand antisyphilitic treatment. Nevertheless he had had mercurial plaster and local measures applied and, in spite of it, the lesions remained the same to-day, with new lesions appearing, but of somewhat different character. The diagnosis of lupus erythematosus had not occurred to him.

Perithelioma of Kidney with Necrosis.—This specimen was presented by Dr. Howard Lilienthal. It was removed from a woman fifty years old, who had been admitted to the Mt. Sinai Hospital on November 5. The menopause occurred 1½ years ago. She has had malaria and facial neuralgia several months ago. Her present condition has been of three months' duration, beginning with weakness and marked loss of flesh without any pain. Four weeks ago she had difficulty in passing her urine, which was accompanied with a small amount of bright red blood. During the following two days the urine was very dark in color, and on two occasions, she passed two clots of blood. The amount of urine and frequency of urination were unaffected. There was no headache or dyspnea. The abdomen showed much relaxation of its walls with tympanites, and a marked asymmetry. There was a huge mass protruding in the left flank, reaching the median line. It had rounded edges, was elliptical, the long axis running downward and inward. The surface was lobulated. Above it ended just behind the free border; it reached posteriorly, deeply in the lumbar region and was readily ballotted. Internally it reached well behind the median line and below the iliac crest. It was freely movable. The colon was pushed inward. No intestine could be felt in front of it. It was solid and very hard. The tumor could not be felt in the vagina, and apparently it had nothing to do with the pelvic organs. On November 8 he operated upon her, making first the Israel incision for nephrectomy. Pushing aside the peritoneum he got this mass out without cutting into the peritoneum at all. The amount of bleeding from such a large kidney was not at all great. The patient went to bed in good condition and has remained so ever since. The wound has healed, except for one opening left for drainage. This mass turned out to be a peritheliomatous tumor, due to embryological conditions. These tumors do not give rise to symptoms until pretty late in life. He had had another case occurring in a woman thirty-five years old and still another occurring in a man forty years old. The two women recovered but the man did not. The man's tumor was a great deal larger than the other two. In its interior it had necrosed. The peculiar symptom of bleeding is practically a constant one in these cases. A diagnosis can only be made with certainty with the appearance of secondary growths or by operation. So soon as you cut into a mass of this nature one can see a peculiarly yellowish color. In cases of small tumors of this kind cutting into them would lead you to think that possibly you had to deal with a case of tuberculosis; but when one had seen several such cases the mistake would not likely occur. This growth was usually found on the superior portion of the kidney. The pathologist stated that the mass was perithelioma, that is, a rather vascular tumor nearly sarcomatous in type.

NEW YORK NEUROLOGICAL SOCIETY.

Stated Meeting, January 6, 1903.

The President, Pearce Bailey, M.D., in the Chair.

Marked Case of Exophthalmic Goiter.—Dr. J. Arthur Booth presented a married woman, twenty-four years of age, exhibiting exophthalmic goiter to a marked degree. The symptoms had appeared four years ago, the right eye being first affected. She presented the rapid pulse and nervous symptoms characteristic of this disease. He purposed having the sympathetic exsected on each side, and would report upon the case later.

Dr. M. Allen Starr said that the tension of her pulse was very high and the pulse itself was small. This interested him because in the majority of cases he had seen there had been a decided diminution of arterial tension. This had suggested to him the propriety of using thyroid in cases of high arterial tension, especially in arteriosclerosis and allied conditions. Of late he had tried this, and had been pleased with the results.

Dr. William M. Leszynsky said that in a recent journal article the statement had been made that the goiter would be practically obliterated for the time being if the patient, while lying down, made an effort to draw the head forward. The pressure of the sternomastoid and other muscles seemed to cause a complete obliteration of the goiter. He had tried this experiment in two cases, with the result stated.

Dr. Booth said that at one time he had been of the opinion that many of these cases presented a high tension pulse, and many of them seemed to be helped by aconitia, yet this condition did not seem to prevail in the majority of cases. He had not tried the experiment spoken of by Dr. Leszynsky. He had seen four operations for excision of the sympathetic done, and in two of them the effect on the goiter and on the pulse was prompt and very marked.

Dr. W. B. Noyes said that this operation was certainly a very dangerous one. He had recently had a patient operated upon in this way at St. Luke's Hospital. The operation was rather prolonged, and the patient died on the table without the usual signs of shock.

Dr. Booth said that he had been present at that operation, and the case had impressed him as being a very bad one for this operation.

Dr. B. Onuf presented a man having a peculiar affection of the terminal phalanges of the hands. It first began about eleven years ago, the first thing noticed being some thickening of the terminal phalanx of the middle finger of one hand. The corresponding finger of the other hand was next affected, and gradually the disease involved the other phalanges. Subsequently the nails presented transverse ridges, and became very brittle. At the present time, there was very marked thickening of the terminal phalanx of the thumb, and all of the terminal phalanges were in a state of semiflexion, and showed moderate thickening. There was no specific history, and the examination of the lungs was negative. There was nothing pointing to syringomyelia. Several radiographs of the case were presented. These showed that there was almost complete absorption of the entire terminal phalanx of the thumb and of the middle and index fingers. A radiograph of the foot showed similar changes, though less marked. The disease appeared to Dr. Onuf to be a degenerative one. Radiographs of five phthisical patients having clubbed fingers had been studied by him, but they showed nothing like the same changes as the case just presented.

Dr. Booth said that seven years ago he had seen a piano polisher whose both thumbs were alone affected in this manner.

Dr. Starr said that about seven years ago he had taken photographs of a woman at his clinic who presented a similar condition. The case was not understood at the time, and the photographs were taken because it was considered a curiosity.

Spastic Paraplegia.—Dr. George A. Lawrence presented specimens from a case of spastic paraplegia that he had had under observation since Nov. 9, 1895. The patient gave a history of scarlet fever and of dorsal Pott's disease in early childhood. He was able to attend to business until the summer of 1895 when he fell downstairs and became unconscious. This was followed by several epileptiform seizures. Examination showed no paresthesia or anesthesia, but there was marked ankle clonus and fibrillary twitchings of the muscles were present in the legs, with jerking of the limbs at night. The man received iodide of potassium, in doses as high as 200 grains, three times a day, and also strychnine sulphate in doses varying from one one-hundredth to one fiftieth of a grain. He improved greatly under this treatment, and by the fall of 1896 was going to business. In the following March there was another exacerbation. In September, 1898, he was able to return to business. On March 15, 1899, there was considerable pain in the chest and a drawing up of the limbs was still more marked. In October of that year there were marked fibrillary twitchings of the muscles of the legs and thighs. In December, 1900, there was another exacerbation. On Oct. 2, 1902, the upper extremities were becoming involved, and the patient was growing emotional. On Dec. 1 the heart action and breathing were rapid, and he was exceedingly nervous. On Dec. 26, 1902, death occurred. A post-mortem examination of the brain and spinal cord alone was permitted. This was made by Dr. Strong and himself the following morning. The spinal canal was found to have been encroached upon at the site of the old kyphosis, and there was much thickening of the anterior surface of the dura mater. The anatomical diagnosis was spastic paraplegia due to a chronic myelitis. The microscopical examination had not yet been made.

Address of the Retiring President.—Dr. Joseph Collins, in retiring from the Chair, reviewed the scientific work of the Society during the two years he had been its president.

Inaugural Address of the President.—Dr. Pearce Bailey selected as the theme for his address, "Fracture at the Base of the Skull." He said that from the uniformity in localizing signs the conclusion was unavoidable that the brain lesion accompanying this fracture must also be quite constant. Neurological examinations were often made with difficulty because the patient was comatose. The cranial nerve injuries were usually multiple and came on immediately or within a few hours. When appearing still later they were difficult of explanation. Paralysis of the olfactory nerve was sometimes the only focal symptom, but it was usually absent altogether. Blindness and amblyopia in fractures of the base were usually due to fracture of the optic canal. It was probable that amblyopia might also be caused by hemorrhages at the base of the skull, which push their way into the optic canal and compress the nerve. Visual disturbances following fractures were always alarming symptoms. Traumatic affections of the optic nerve were frequently accompanied by oculomotor palsies. The frequency with which the third, sixth and fourth nerves were involved was in the order named. The sixth nerve and the seventh were often injured, and this was commonly associated with deafness. It was rare for oculomotor palsies to persist longer than a few months. In most of the cases of traumatic ptosis that he had seen there had usually been sufficient weakness of the affected eyelid left to enable one to determine which lid had been involved. Generally, the dilated pupil corresponded with the side having the greater brain injury. Of five cases presenting equally dilated pupils, only one recovered. The facial was the most frequently involved single nerve. Paralysis of the extremities showed itself more commonly as a weakness or as a hemiplegia. Paraplegia proved almost invariably fatal. The knee-jerks were frequently diminished or lost at first, but later returned, and might even become over-active. Convulsions were very rare in fractures at the base. From the initial, profound coma a large number of persons who die never emerge, but profound and persistent coma was rare in cases which recover. The most characteristic mental state in these cases was semi-coma. A fatal result was to be looked for in more than one-half of the cases of fracture at the base. A collection of 494 cases showed a mortality of 57 per cent. In probably 95 per cent. of the fatal cases death occurred within five days of the receipt of the injury. Age did not seem to be an important feature in prognosis. Alcoholism affected profoundly both the immediate and ultimate prognosis. With regard to the ultimate prognosis, the speaker said that the literature appearing on this subject was meager. He had been able to obtain the ultimate result in 14 out of his 28 cases. In all of the cases there was a period of at least one year after the injury. In general, it might be said that in the majority of cases the patient would be as well as before the injury at the end of the first year. In a certain small proportion of cases, however, there were certain changes in disposition or mentality. Irritability of temper, quarrelsomeness, headache and diminished resistance to alcohol were noted in some of those persons, particularly in alcoholics and those suffering from diseases, such as Bright's disease, which affect the arteries. Epilepsy did not seem to be a consequence of fracture at the base of the skull. If brain injury figured in the etiology of insanity such patients should be found in insane asylums. It was probable that there were 500 cases of fracture at the base occurring annually in this city, and that 150 of these persons recovered; hence, if such an injury were a common cause of insanity these persons would be found in the insane hospitals of this vicinity. Dr. A. E. Macdonald had kindly investigated this question for him at the Manhattan State Hospital, but had been unable to find more than one such patient in a thousand. The conclusion seemed to be that fracture at the base was a negligible quantity in the etiology of insanity.

The Daily Rhythm of Epilepsy and Its Interpretation.—Dr. L. Pierce Clark read this paper. He said that in 1897 he had collected and tabulated 9,545 epileptic seizures by hours. The greatest number of seizures occurred at 4 A.M. Since then he had collected cases occurring in both sexes at the Craig Colony, and had tabulated 150,000 epileptic seizures. During the greater part of this study sedative treatment was at a minimum. The great majority of the patients were in bed, in the first group, and slept from 7.30 P.M. to 5.30 A.M. There were three fairly marked curves: that of early night, or 9 P.M.; that of early morning, or 4 A.M., and that of noon. Another class studied was among the outdoor workers at the Colony. The three main curves were much the same as in the other group, and, as in that group, there were fairly marked secondary curves at 9 A.M. and 5 P.M. In another chart, comprising the whole of the 150,000 seizures, the secondary curves were still more apparent. It was found that the seizures were about equally divided between the day and night. Sleep was deepest during the first hour, then became lighter for an indefinite period, and then deepened again and lightened once more about one hour before awakening. In certain cases in which deep and perfect sleep did not come on at once, various crises occurred. During the deepest sleep of the epileptic he had never been able to elicit the knee reflexes without adopting sufficiently harsh measures to awaken the person. The bromides diminish the afferent impulses to the cerebral cortex, and are aids to cerebral inhibition. At noon the epileptic became fatigued and was in a condition comparable to light sleep. Moreover at this time the heaviest meal was taken, and auto-intoxication was at the maximum. Epileptics should not be idle; they should have a simple but not a monotonous occupation. This study showed that the twenty-four hours were roughly divided into eight-hour periods.

Dr. B. Sachs asked for further information regarding rhythm in the individual epileptic; also if one of the reasons the attacks were so apt to occur in the early morning hours was that the air of the sleeping apartment was especially vitiated at this time. He would also like to know if it were safe for epileptics to engage in occupations which would place them in danger should a seizure occur.

Dr. M. Allen Starr said that he had noticed that in the individual there was a tendency for the seizure to return at a certain hour. He had just seen a patient who for sixteen years had never had the attack except between six and seven o'clock in the morning, but who for the first time yesterday had had an attack in the afternoon. This fact seemed to him of some importance in the treatment. Attacks occurring in the early morning hours seemed to point to a weakened circulation in the brain, and hence in such cases he was disposed to combine such remedies as digitalis and strophanthus with the bromides. In some of these cases he thought benefit was derived from awakening the patient early in the morning and giving some hot stimulant.

Dr. W. M. Leszynsky said that in cases of nocturnal epilepsy the rhythm had been considerably changed by the bromide treatment. The attacks would often disappear at night and occur in the day time when they had not done so before this treatment was instituted. Mention was made of a man whose attacks had always been at night while taking bromide at night, and whose attacks first appeared in the daytime when the bromides were given during the day.

Dr. J. Arthur Booth said that he too had observed this change in the rhythm as a result of treatment.

Dr. I. Abrahamson asked if Dr. Clark had made any investigations on the metabolism and blood pressure at the time of maximum seizures.

Dr. Smith Ely Jelliffe said that modern investigations had shown that the blood-pressure was at a minimum in the early morning hours. It had been claimed that there was more or less rhythm in the leucocyte count at the different periods of the twenty-four hours.

Dr. Clark said that there was no doubt that investigation of the metabolism and blood pressure would show them to go hand in hand with that condition expressed only too indefinitely by the term "auto-intoxication." Alterations in blood pressure, he thought, varied with the depth of sleep. The rhythm of the epileptic seizures were certainly greatly influenced by treatment, as well as by diet, exercise and other things. He had known many epileptics to carry on the trade of carpenter for a long time without meeting with any accident, but the latter was prone to come when they became so accustomed to their work as to relax their guard.

SOCIETY OF ALUMNI OF BELLEVUE HOSPITAL.

Meeting of January 7, 1903.

The President, Robert T. Morris, M.D., in the Chair.

Open Appendix.—Dr. W. Gill Wylie presented a paper on this subject. He said that, as a rule, the surgeon was not called to see a case of appendicitis until some local peritonitis had developed. He was sure the diagnosis could often be made, however, before this stage, and that this would clear up many cases ordinarily set down as chronic dyspepsia or chronic colitis. These cases were very apt to be found in women who were poorly developed in their generative organs, and who were delicate. In many of these cases, he contended, there was an "open appendix," and that this gave rise to much of the nausea, vomiting and abdominal pain which they experienced. Many were complicated by a loose right kidney. The differential diagnosis was naturally difficult. These persons should be put to bed on an exclusive milk diet, and should be observed daily for a time. Local tenderness directly over the appendix was the best indication here of trouble in this organ. There was apt to be a slight and irregular rise of temperature. Where there was imperfect physical development and more or less enteroptosis the appendix was often found hanging over the brim of the pelvis. The symptoms were so mild and so vague that both the general practitioner and the surgeon were apt to be misled. One of the first cases treated by him had been for a long time known to him. Finally, in one of the attacks he found tenderness over the appendix and enlargement of some of the retroperitoneal glands. Two physicians diagnosed typhoid fever, but he insisted that it was appendicitis. In the next attack he operated and found an open appendix. By an "open appendix" he meant one in which the mouth was only slightly constricted or guarded by valvular structures as to allow of easy entrance of matter from the bowel. It was his belief that in many delicate and dyspeptic persons the accompanying relaxation was apt to lead to the formation of an open appendix; at any rate, in the majority of the cases now under consideration the mouth of the appendix was found wide open. A typical case of this kind he had seen in a young girl who came to him with a slight rise of temperature and a history of very frequent attacks of nausea. Slight tenderness over the appendix and a close study of the case led him to make an exploratory incision, and it revealed the proximal three-quarters of an inch of the appendix very wide open. Another case was that of a young woman in whom he had found a very loose right kidney, which caused pain when pressed upon by the clothing. The appendix was exceedingly tender. For three or four months she was treated by a stomach specialist, and while she improved it was impossible for her to eat like others without experiencing an attack of indigestion. Dr. W. T. Bull then saw the patient and advised operation on both the appendix and the loose kidney, but considered the latter the chief offender. On opening the abdomen Dr. Wylie found old adhesions around the appendix, causing a turning upward of the latter, which was four inches in length. The right kidney rested directly over the appendix. In all of the typical cases of open appendix operation had yielded him most satisfactory results. Under favorable conditions there should be no mortality from this operation in uncomplicated cases.

Dr. John F. Erdmann said he had followed the teachings of Dr. Edebohls for the last two or three years. In every case in which he found a floating kidney on the right side he always advised removal of the appendix at the time of anchoring the kidney. Some time ago a physician had come to him with a markedly prolapsed right kidney, which he attributed to horseback riding over country roads. The speaker advised anchoring the kidney and the removal of the appendix at the same time. He learned subsequently that this man had been operated upon at St. Luke's Hospital by Dr. Curtis for attachment of the kidney, but that about four weeks later a second operation had been made necessary by a sharp attack of appendicitis.

Dr. Alexander Lambert said that in the past two years, since his attention had been drawn to this subject by Dr. Wylie, he had found that more of these cases were met with than he had previously supposed. There was usually a chronic dyspepsia, and pretty constant discomfort without any well-defined acute attacks of appendicitis. He had been impressed at the great rapidity of improvement in appetite, digestion and nutrition which occurred immediately after operation. This was much more noticeable than after operations for acute appendicitis. In a recent case, supposed to be one of open appendix, this organ was found long and very narrow.

Dr. C. E. Quimby said that medical men saw many of these cases, and hence he would like to know whether Dr. Wylie assumed that the appendicular trouble was the beginning. In many cases he had himself been inclined to the opinion that the original trouble was a colon impaction, especially when associated with gas formation. It had occurred to him that the open appendix was the result of the pressure of gas. This pressure was absolutely uniform in every direction, and hence, it was probable that it might open up the appendix when the muscular layer of the latter had become weakened by auto-infection and prolonged impaction. He had certainly seen the whole set of symptoms disappear in cases which he thought Dr. Wylie would call open appendix as a result of a thorough and persistent evacuation of the bowel.

Dr. Wylie said he had not reached the conclusion that the appendicular trouble was the original one, but rather that it had resulted from a chronic intestinal disorder. Many of his cases had been permanently relieved by operation, even when their condition had been so bad that tuberculosis had been suspected. The fact that the old symptoms did not return showed that the appendix was the chief, if not the only, cause. In some of the cases complicated by loose kidney the results had been good simply from operating upon the appendix.

Dr. William J. Chandler said that all who saw much of appendicitis would feel the force of the remarks made by Dr. Wylie, and he thought they would all be impressed with the idea that attacks of intestinal disturbance often precede appendicitis. He recalled one case of persistent intestinal colic without any localization in the region of the appendix. Finally, the appendix was removed and since then there had been no intestinal colic. The term "open appendix," was new to him, and he could not say that in operating he had observed any special patulousness of the opening. He had noticed, however, a relative enlargement.

Dr. Frederick Holme Wiggin, agreed with Dr. Wylie, that disease of the appendix was very common in women, as was also colon impaction, to which he believed the former condition was largely due. For many years he had been opposed to removing the appendix in connection with abdominal operations performed for other conditions, unless the history of the patient indicated disease of this organ, and the appendix when the abdomen was opened was clearly diseased; but he had gradually learned that nearly most all of the appendices met with in his abdominal work were diseased. In some of these cases, where the dyspeptic symptoms had been especially marked and the patient had exhibited a craving for stimulants, he had found that the removal of the diseased appendix had restored the natural appetite and had caused the cravings for stimulants to disappear. Consequently he had during the last year or two strongly favored the removal of the appendix in patients, exhibiting marked dyspeptic symptoms of obscure origin accompanied by chronic constipation when irrigation of the colon with saline solution had failed to remove the dyspeptic symptoms; even when the pressure over McBurney's point had failed to reveal special tenderness: in a number of instances the appendix had been found to be markedly diseased and the operation had been followed by the disappearance of the stomach symptoms and the rapid return of the patient to health.

Dr. Robert T. Morris said that about the year 1894 Senn had described a normal involution of the appendix, showing that after the age of twenty the lymphoid layer gradually became replaced by connective tissue. This occurred, as a rule, evenly. These cases of normal involution were found in almost all post-mortem examinations made in persons over forty years of age in whom it was supposed symptoms of this condition had not been present. About two months ago, the speaker said, he had described in the New York *Medical Journal* a series of involution cases, and had described also the symptoms associated with the involution. These cases were exceedingly common, and the complex reflex symptoms certainly disappear after the removal of the appendix, even though there had been no symptoms of acute infection which would lead most surgeons to operate. Dr. Quimby's question as to whether these symptoms were primary or secondary should receive further consideration. Gas pressure must certainly exert some influence, yet it was known on the other hand that normal involution occurred in most persons suffering from indigestion. In a recent discussion on intestinal dyspepsia at the Academy of Medicine nothing was said about these involution cases, though the descriptions of some of the cases indicated that they belonged to this class. There was no doubt that many of these appendices were quite widely open. In many cases the appendix was said to be normal when removed at operation, and yet the patient improved markedly after the operation. Such an appendix was the seat of normal involution. The association of appendicitis with loose kidney was very common. Edebohls was of the opinion that the loose kidney pressed upon the superior mesenteric vein, causing stasis in the cecum and appendix. In many of these cases Luschke's ganglion was tender, even without distention of the appendix. It could not be denied that a congested appendix was very frequently found in association with a loose right kidney.

Dr. Wylie, in closing, said that he had been studying this subject with great care for a period of six or eight years, and he was pleased that his communication had been so well received. Mention was made of a case in which a woman, while pregnant for the first time, developed an abscess, which was thought to be in the kidney. Before any operation could be done the abscess emptied itself through the bowel and she aborted. She subsequently suffered a good deal from attacks of colitis, and finally he diagnosticated appendicitis and removed the appendix.

The Significance of Itching as a Concomitant of Disease, and as a Cause for Disease.—Dr. E. B. Bronson said that in a study of this subject, made by him some years ago, he had endeavored to show that itching had its origin in the nerve endings in the epidermis. He believed that the disturbance of the original and primitive sense of contact was the real cause of itching. Connective tissue diseases did not cause itching, even when superficially located. For example, mycosis fungoides was an affection closely allied to sarcoma, and yet was a pruriginous disease. It produced effects on the skin similar to those of eczema, and hence was marked by great itching. An erythematous disease was not per se a pruriginous one. The morbid sensation was more apt to be that of smarting or burning. The instinctive impulse in scratching was to attack and remove an irritating something which was vexing the sense of contact. Smarting of the skin had a different mode of production, and required different treatment. Urticaria was liable to occur in nearly all irritative affections associated with hyperesthesia. In the production of the wheal a disorder of the unstriped muscles of the skin and of the blood vessels was concerned. Scratching always aggravated the condition. In a number of papular pruriginous diseases it was a fact that hypertrophy of the erectores pili was present, pointing to the part played by these muscles in itching. Of all the inflammatory pruriginous diseases eczema was the one in which trophic changes in the epidermis were the most prominent. Pruritus was apt to be marked if the lesions of a cutaneous disorder were situated in the prickle cell layer. Pruritus was almost always associated with acute disturbances or changes in the epidermis, but might be absent when these changes occurred slowly. Again, pruritus might occur without obvious change in the epidermis, and might be generalized over the body. There could be little doubt that the central nervous system comprised centers controlling the nerves of the skin. In essential pruritus the determining cause was probably to be found in the skin itself. In many cases this cause was an initial hyperesthesia. The common assumption that in the toxemias, in diabetes and in icterus, the itching is due to the direct irritation of toxic matter circulating in the blood, lacked proof. A sudden change to cool, damp weather, or the taking of a cool bath would provoke urticaria in certain nervous and susceptible individuals. There seemed to be a curious interaction between disturbance of the temperature sense, and the sense of contact. In this connection it was interesting to recall the fact that a sensation of burning was sometimes produced in the absence of any obvious lesion of the skin. It was really a form of pruritus, and was often preceded by it. Sexual neurasthenia was sometimes the only discoverable cause of pruritus ani or of pruritus progenitalis. Pruritus was sometimes the result of mental suggestion, as when a person suffered from intense itching in the belief that he was a victim of pediculosis, though examination showed this condition to be absent.

A gouty diathesis or a neurasthenia was often responsible for a pruritus of the anus or vulva, but after a time a form of eczema developed as a consequence of the pruritus. In such cases if the itching were cured the eczema would take care of itself. Again, there were many pure vasomotor disturbances with more or less decided trophic changes, which must be attributed to a pruritus and the consequent scratching. There was a diversity of opinion regarding the position of the papule in the prurigo of Hebra, but it was undeniable that much of the trophic change in this disease was solely the result of scratching. In the treatment of all pruriginous affections measures directed to the relief of itching were of the first importance. Allay the itching and an important etiological factor, and often the essential one in the disease, would be eliminated.

Dr. C. E. Quimby said that he had been in the habit of considering the burning sensation experienced after going to bed as a forerunner of apoplexy. This condition he had found almost invariably associated with a persistently high arterial tension. This burning sensation was apt to occur chiefly in the lower extremities below the knees, and according to his experience these cases almost invariably showed a marked accentuation of the second sound of the heart.

Dr. J. W. S. Gouley said that he had listened to this paper with a great deal of interest because it was marked by a high degree of scholarship which was unfortunately rare among the members of the medical profession at the present day. If greater care were taken generally in the preparation of medical papers they would live long after their presentation. He would urge the younger members to write their papers at least three times—four times would not be out of the way. Such a paper as that just presented by Dr. Bronson would live, and would be quoted a hundred years from now.

Dr. Bronson said that it had been his experience that neither the vasomotor nerves nor the blood vessels had anything to do with the burning sensation referred to by Dr. Quimby. He believed it was entirely a matter involving the nerves connected with the temperature sense. The nerves in the lower extremities were less highly developed, and itching was apt to be most intense here. The reason for itching occurring so commonly in the genitals was probably to be found in the perturbations to which these parts were subjected. Moreover the aphrodisiac sense was of a low order, and it was just in nerves of this order that itching was most apt to occur. In answer to Dr. Morris he would answer that it was only a matter of relative degree.

NORTHWEST MEDICAL SOCIETY OF PHILADELPHIA.

Stated Meeting, Held January 6, 1902.

The President, Wendell Reber, M.D., in the Chair.

The Preparation of the Patient for Nose and Throat Operations Under Local Anesthesia.—This was the title of a paper read by Dr. Nathan G. Ward, in which he directed attention to the importance of careful preparatory treatment for all operations on the nose and throat, which he felt was often neglected when the operation was done under local anesthesia, another deleterious factor being that too frequently the patient insisted on having the operation done on Sunday or at night and returning to work the following day. The advantages of preliminary treatment were first brought to his attention several years ago, in an operation on a case of deviated septum, in which in order to induce the patient to have the operation done under cocaine, he had promised to administer ether, if the operation proved too painful, the preliminary treatment, of course, being administered. The recovery was more rapid than in other cases and this has been the author's uniform experience with the cases prepared and those not. The preparatory treatment should be both local and systemic, the local effort being directed to improving the condition of the mucous membrane by the use of alkaline and oily solutions, containing menthol, carbolic acid, etc. The systemic treatment should be directed principally to the organs of elimination, and consist chiefly of laxatives, diaphoretics and diuretics. So far as antisepsis is concerned, strong solutions of mercuric chloride and carbolic acid are apt to produce too much inflammation, and, therefore, the main reliance must be placed on hydrogen peroxide, and strict cleanliness. Cocaine, in four-per-cent. solution, applied by dipping pledgets of cotton therein and placing on the seat of the operation for 30 minutes to an hour, was thought to give the best results for the primary anesthesia, but for the reinforcement of the anesthesia during the operation, eucaine was recommended, on acount of the possible systemic effects of the cocaine. The application of adrenalin, just before the operation was recommended, as it deepens and prolongs the anesthesia, and tends to bleach the tissues and prevent hemorrhage, although its use is not unattended by drawbacks, as the experience of the author, as well as many others, has been that it tends to increase secondary hemorrhage. Reference was made to several instances which had come under his notice where it was necessary to discontinue the operation for a few moments during its progress, owing to the patient complaining of a choking or smothering sensation referred to the region of the neck, throat and heart, which he ascribed to reflex inhibition transmitted from the areas supplied by the trifacial, glossopharyngeal and recurrent laryngeal nerves to the cardio-inhibitory and pulmonary branches of the pneumogastric. The use of atropine in 1/200 to 1/100 of a grain doses every two to four hours, for from six to twelve hours preceding the operation has been found to lessen this condition.

Accidents and Complications Following Operations on the Nose and Throat.—Dr. Justus Sinexon read this paper in which he commented on the fact that there seemed to be a general belief, not only that the nose and throat would tolerate any operation, but that this region was a rich field for operative procedure. He felt that two great errors into which many rhinologists and laryngologists had fallen into were the tendency to disregard constitutional treatment and employ the knife, and the desire to produce a cosmetic rather than a constitutional effect, entirely forgetting the functions of these organs. Healthy secreting tissue, he felt should not be substituted by non-functionating tissue, merely for the sake of symmetry, and in all cases, prior to operation, the family history, occupation, hereditary predisposition, etc., should be carefully studied, as syphilis, gout, rheumatism, indigestion, cardiac, renal and hepatic disorders, exerting a well-known causative effect upon these conditions. Careful antiseptic operative preparation was recommended, and when operation is necessary it should be done with as little cicatricial tissue as possible, and all the pieces of bone, cartilage, etc., should be removed, as otherwise they will form an obstruction to drainage and reparation. The use of alkaline douches as a post-operative treatment in the nasal cavities was thought by many to be of value. In all cases of epistaxis, it was recommended that careful consideration be given to the constitutional condition of the patient, and the use of cocaine solutions should be avoided, as the subsequent hyperemia is likely to cause recurrence of the nasal hemorrhage.

While the author did not agree absolutely with the assertion of Woake that polypus of the nose was not a disease per se, yet he felt that the 33 cases reported by Grünwald, in which he found three cases of empyema of the maxillary sinus, 14 of the ethnoid, one of the sphenoid, and in eleven of which there was combined empyema of the several cavities were indicative of the frequency of the occurrence of sinusitis as a symptom, if not a primary cause of the polypoid growth. Operation should be as near the base of the tumor as possible and care should be taken to avoid injury to the osseous growths. This method will insure drainage of the normal sinus openings and prevent infection of the cavities unless it already exists. Curetting and the application of caustics following such operations should be avoided, as they are liable to destroy the surrounding tissue, and infect the sinus. Rayser has reported a case of meningitis with infection of the superior maxillary sinus following such an operation. Stork has reported five cases of meningitis, one of which was fatal, following operation with the curette, for nasal ulcers. Ozena, while it is frequently associated with sinus disease, may also occur coincidently with undetermined hereditary syphilis.

In abscess of the septum care should be taken to avoid injury to the blood vessels, as interfering with the nutrition in this way may cause permanent perforation, and, unless there is a history of injury or marked ulcerative process of the septum, syphilis and other constitutional causes should be considered.

One of the chief dangers in operation on the turbinates is that owing to their close proximity to the sinus openings, they are liable during the process of repair to infect these cavities and cause great suffering or even death. A less serious danger, but one causing much suffering, following operation on the turbinates and also on septal spurs, is synechia, which may be the cause of even more functional disturbance than the original condition. In operations for the removal of septal spurs care should be taken to differentiate between an osseous growth and an acute deflection, which is often very difficult and in the use of the nasal saw for exostosis, care should be taken to avoid injury to the mucous membrane. If the tampon be used as a dressing, it should not be packed so firmly or retained sufficiently long to cause necrosis of the flap. Another untoward effect frequently noticed is empyema of the adjacent sinus, caused by the closing of the normal opening from the edema following the operation, and infection through the same channels may be the cause of severe headaches, etc., which would indicate the necessity for careful post-operative attention.

Following operation for the removal of adenoids may result fatal hemorrhage, injury to the Eustachian tubes, causing deafness, or to the cornea, causing impairment of respiration which is very frequently not noticed until later in life. Chronic deafness may also result as a sequela of adhesive or cicatricial contraction of the orifices of the Eustachian tubes or as a result of the inflammation attendant upon abscess of the tonsils, to avoid which operation should always be done as soon as the abscess is demonstrated. In view of the number of fatal operations following tonsillotomy careful observation should be made of any abnormal condition of the arteries before operation.

Dr. E. B. Gleason, in discussing these papers stated that the pre-operative treatment of the throat had attracted his attention only when the health of the patient was much below par, and referred to the practice of Seyler of employing solutions of iodide of potash and gelatine solutions in order to relieve congestion and make the nasal secretions as nearly normal as possible. The use of antiseptics immediately before operation was thought to be derogatory, as by many the nasal secretions are considered to be somewhat antiseptic, and the abundance of the discharge after the operation tends to wash away bacteria and prevent infection. The character of the nasal secretions can also be improved by the internal administration of iodide of potash and mercury. The speaker referred to the practice of Dr. Fox, who administers a mixture composed of one grain of bichloride of mercury, two drams of iodide of potash and three ounces of water, in teaspoonful doses three times a day, before operating on the afflicted eye.

In regard to anesthesia he felt that better results could be obtained by the use of a weak solution of cocaine for some time than by employing a strong solution for a shorter period, his practice being to soak the nose for about half an hour in a three-per-cent. solution of cocaine, then spray it with a one to one-thousandth solution of adrenalin. While he felt that the use of adrenalin was the cause of post-operative hemorrhage in some cases, it is of great value in operations where a field free from blood is desired.

In regard to the bad results following nasal operation, he did not think they were as bad as sometimes portrayed, and stated that he could recall but two cases occurring in his own practice, one of which was a dental student, who had been working in the dissecting room of the University of Pennsylvania, in which case the sawing out of an exostosis caused enough fever to keep the patient in bed for two or three days. The other case was a case of sepsis following a deflected nasal septum, occurring in a young man whose health was below par. The patient insisted upon going about the city the day after the operation, and on the third day after the operation he had a temperature of 103°F. or 104° F., with severe frontal headache and discharge from the frontal sinus. His frontal headache disappeared in a few days and he made a good recovery. The majority of post-operative complications he inclined to think were due to some mistake in the after-treatment. Severe hemorrhage following nasal operation he did not think was very likely to occur and the possibility of this complication could be lessened by doing the operation as rapidly as possible. When hemorrhage does occur the application of a piece of cotton saturated in peroxide of hydrogen and wrapped around the end of an Allen's probe and pressed upward against the clots usually gives relief. He recommended that only the hypertrophied portion of the adenoid or tonsil should be removed, as the removal of the whole gland was more apt to induce hemorrhage, and he had observed cases where hemorrhage had occurred when the condition had been previously treated by the galvano-cautery. Scarred tissue is most likely to form when the operation is on the anterior portion of the septum, the secretions usually being sufficient to prevent its formation further back, and this same result is usually avoided by being sure to make a perfectly flat union. The use of a small quantity of iodoform gauze for the first 12 or 24 hours was thought to facilitate healing, but it should be removed at the end of that time.

Dr. Hugh P. McAniff reported two cases of inhibition which had come under his observation. The first occurred in a girl, about twenty years of age, on whom he was about applying a two-per-cent. solution of cocaine for the removal of an adenoid from the turbinate, when the patient fainted and it required about one hour to restore her. The other case was a man, aged about twenty-five years, to whom chloroform had been administered prior to the opening of an abscess on the elbow. About the time of making the incision, respiration ceased, the patient became unconscious, compelling the abandonment of the operation, consciousness being restored in about five minutes by the application of two or three drops of aromatic spirits of ammonia.

Dr. A. B. Kirkpatrick stated that he had three or four cases of eczema following infection from the discharge in hay fever, and had usually secured good results from the employment of equal parts of iodine and carbolic acid. In regard to post-operative complications, he felt that with proper antiseptic precautions the danger was very small and could recall but one case which had occurred in his own practice, which was an operation for a small septal spur, the patient being very anemic and he attributed the sepsis which followed the operation largely to the heart condition. In regard to hemorrhage, he stated that he had observed this condition in three or four tonsillotomies, where the prior treatment had consisted of the galvano-cautery and nitrate of silver, but outside of these cases had had no difficulty in controlling the hemorrhage.

Dr. Wendell Reber referred to the comparative rareness with which infectious conditions seemed to occur in the nasal operation, this condition being a source of considerable apprehension in ocular operations, Dr. Lippincott of Pittsburg, recommending spraying of the nasal cavities one hour before doing an operation on the eye. It was felt to be error to do any ocular operation where there is disease of the lacrymal cavities, as many infections of the eye are believed to be contracted in that way.

Dr. Justus Sinexon, in closing, referred to a case in which he had employed nitric acid for enlarged turbinates, resulting in sloughing, the recovery being very tedious. He also referred to two cases of severe hemorrhage which he had observed after operation on the turbinates, one lasting 12 hours and the other continued for two days. The employment of a gelatine and iron solution was the only thing that would control the hemorrhage. One of the great derogatory factors in the practice of rhinology he felt was the taking of a patient in off the street and immediately doing an operation, and he felt that this method should be discouraged.

BOOKS RECEIVED.

The MEDICAL NEWS *acknowledges the receipt of the following new publications. Reviews of those possessing special interest for the readers of the* MEDICAL NEWS *will shortly appear.*

GUY'S HOSPITAL REPORTS. Vol. LVII. J. & A. Churchill, London.

INTERNATIONAL CLINICS. Vol. IV. Twelfth Series, 1903. J. B. Lippincott Company, Philadelphia.

TRANSACTIONS OF THE AMERICAN GYNECOLOGICAL SOCIETY. Vol. 27. 1902. W. J. Dornan, Philadelphia.

ATLAS AND EPITOME OF HUMAN HISTOLOGY. By Dr. J. Sobotta. 8vo, 248 pages. Illustrated. W. B. Saunders & Company, Philadelphia and London.

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SPECIAL ARTICLES.

NEW YORK ACADEMY OF MEDICINE. VALEDICTORY ADDRESS.

BY ROBERT F. WEIR, M.D., HON. F.R.C.S., ENG.
OF NEW YORK;
RETIRING PRESIDENT.

Fellows of the Academy, Ladies and Gentlemen:

You have heard the reports of the various officers of the Academy and have learned that its affairs are progressing satisfactorily, and that the year closes with a surplus—though not a large one—in the treasury. This latter I particularly regret as it shows that the needs of the Academy as at present conducted necessarily absorb practically all its income. Two years since the number of its resident members was 774, of which there were 739 from the City and 35 from the State. Now, at the close of my term of office it remains nearly at the same figures, viz.: 789 Resident Fellows, of which 740 are from the City and 59 from the State. I had hoped that some measure ere this would have been presented whereby the gates of the Academy, now narrowed by a large annual subscription, might have been broadened by lessened dues, so that many of the able but struggling young men of the profession might enter its doors. It was hoped early in my administration that a minimum yearly due of $5 or $10, such as has been accorded to the State members, might be extended for a limited number of years in a graduated manner to entering members as an inducement to attract what is the life and progress of any medical society, viz., the young men of the profession; for without them there is no advance. It has, however, been found impracticable to effect this without disturbing the financial adjustment of the institution. Therefore I am compelled to leave the solution of this question to my successors. I believe, however, it to be of vital importance to the future of the Academy to guard against the threatening ease of senility that is apt to assail long existing societies.

During the past year the average attendance at the Stated Meetings of the Academy has been, for 1901, 87; for 1902, 104. The maximum attendance was, for 1901, 140; for 1902, 210. As this is larger than has been in the past, my thanks for these results must be given to the Vice-Presidents and others of my professional friends who have aided me in carrying out these meetings. The most zeal is manifested at the Section Meetings, and though there is more activity to be expected and found in the branches than in the body, yet the old fable teaches us that the belly and the members cannot be separated. The average attendance at these meetings of the Sections was as follows:

Medicine, 70; Otology, 67; Laryngology and Rhinology, 40; Obstetrics and Gynecology, 37; Pediatrics, 36; Ophthalmology, 35; Surgery, 32; Genito-Urinary Diseases, 32; Orthopedics, 25.

Since the foundation of the New York Academy of Medicine, in 1847, there have been 27 Presidents elected. The term of service until 1859 was for one year. It was then lengthened to two years, which rule holds good at the present time. Several Presidents by their popularity and ability have been reelected for one or two additional terms of office. These were Dr. Anderson, President from 1861 to 1866, Dr. S. S. Purple, 1875-78, Dr. Fordyce Barker, 1879-84; Dr. A. Jacobi, 1885-88, and Dr. A. L. Loomis, 1889-92. Notwithstanding these distinguished servitors of the Academy did admirable and laudable work for the institution and fully deserved their reward, yet since this last date a growing feeling has silently developed that the one term service is to be advocated. In this I fully concur and trust that it will become the rule. The conferring of the distinction of being the presiding officer of your noted body cannot lessen the dignity of the position by occurring fifty times in a century.

Among all these names so well known in the history of medicine and surgery in this city and country, there are to be found only those of five surgeons. Dr. Valentine Mott, 1849-1857; Dr. A. H. Stevens, 1851; Dr. Willard Parker, 1856; Dr. John Watson, 1859; Dr. A. C. Post, 1867, and Dr. J. D. Bryant, 1895. Why surgery has been so slightly represented in so august a position as this is, is not easy to say. It may be from the modesty of character for which the surgeon is so noted, or perhaps from his freedom from ambition, or perhaps from his inability to understand or manage what is called medical politics. The lesser position that surgery held to medicine forty years ago is more likely to account for the preeminence justly given to the pure physician. But this no longer holds. Surgery leads nowadays as the curative agent, and will continue, I believe, in this lead. Important and numerous diseases then treated medically are now treated surgically, and the reverse seldom occurs. It is true that perhaps with the advent of an improved serum therapy the tables may again be turned.

It may be of possible interest to some of the Fellows who knew these eminent surgical worthies, as well as to those whose knowledge of them is naught or but scanty, to recall certain facts in their career. To me individually this would be an interesting retrospect, as I knew them all personally.

The first of the surgical Presidents and one of the founders of the Academy, was Valentine Mott. He was born in 1785 and was still practising surgery and lecturing at the University Medical College when I was a medical student in 1856-59. He was and is yet regarded as the most eminent of American surgeons. Of him Sir Astley Cooper said, "He has performed more of the great operations than any man living or that ever did live." His original operations consisted of ligature of the innominate artery, ligature of the common iliac artery, resection of the entire clavicle, resection of the lower jaw, resection and ligature of the deep jugular vein, suturing wounds of veins.

Mott was a very distinguished-looking man and was in a finely preserved condition of health when I first met him. He was neatness personified, carefully valetted and in clothes of spotless black, displaying a shirt front that would have driven a Chinese washman mad with envy. In earlier life Mott was dressed in the old Quaker style that I last saw in the person of the late George F. Trimble, a Quaker and President of the New York Hospital. This consisted of a long, snuff-colored, single-breasted coat with large skirts, an ample waistcoat reaching to the iliac bones, small clothes or knickerbockers to the knees, with silk stockings and low shoes with steel buckles. Dr. Gurdon Buck, my preceptor, told me that Dr. Mott changed this becoming dress to that of the ordinary gentleman because of a mishap that arose from a fond mother placing her infant on the Doctor's knee to be dandled on a gala occasion, when he was attired correspondingly in his best light knickerbockers.

I only once saw him operate in an important case. It was on a patient having a subclavian aneurism in which it was decided at the consultation held by Mott with Drs. Buck and Markoe to ligate the artery on the distal side of the aneurism. Mott chose to ligate below the clavicle and with the bone held in position by "my son Alexander," with one sweep of his scalpel the artery was laid bare. As a medical student I was overwhelmed with admiration at a so well calculated incision. But Dr. Markoe said *sotto voce* afterward in the next room, that the artery had had a narrow escape. It did.

Dr. Mott died in 1865 from thrombotic gangrene. His estate was valued at a million of dollars. His largest fee was $1,000, and this he only received twice. This is a striking contrast to the inflated charges of the present day.

But, though Mott was the most noted, yet the surgeons of this city pinned their faith rather to his rival, Dr. Alexander H. Stevens, who was President of this Academy in 1851 and also one of its founders, and who was for many years Professor of Surgery in the old Crosby Street College—the College of Physicians and Surgeons. Born four years later than Mott, their careers ran side by side and each died in years well beyond the allotted span of life. Like Mott he was also a surgeon to the New York Hospital and there served over twenty years as attending surgeon and, with Mott, was the first to introduce clinical instruction in that institution. Their methods of operating distinctly varied; indeed, Dr. Stevens remarked in his eulogium delivered before this Academy on the occasion of Dr. Mott's death that he not infrequently cut in a manner purposely avoiding neatness in order to show the students that patients would get well without that delicacy of manipulation and nicety of treatment which some surgeons deemed so essential. Which remark smacks somewhat of that of Volkmann, who tersely said, "Give me antiseptics and I'll operate in a privy."

Dr. Stevens was a very successful operator and was expert in the many little things that bring out the best results. As a teacher he was very impressive and I yet remember the occasional words that as President of the College he would let drop from a huge mouth rendered apparently larger by a thin cadaveric face and deep set eyes. He was always spoken of with the deepest respect and never did I hear from my predecessors who knew him well, any word of detraction.

Dr. Willard Parker, the third of the Academy's surgical Presidents, was elected in 1856. What better can be said of him than the quotation from Coriolanus, heading his memorial, by Dr. Francis, "A worthy man." Of a magnificent physique and magnetic manner, with a never-failing cheerfulness and frankness, he was an attractive man to every one. A good surgeon but a better teacher. Though when I was a student his time was passing, yet the principles of surgery that he hammered into the students generally were clearly and forcibly expressed, and never forgotten. Though rest and diet made up the greater part of his remarks, yet they have borne fruit, and have been corroborated by writers and by experience.

Born in 1802 and starting active life first as a farmer's boy, ambition forced him through the positions of village school teacher, then college graduate paying his own way, and finally a graduate in medicine in 1830. A month following his graduation, strange to say, found him lecturing on anatomy in the College of Physicians and Surgeons. This, however, only lasted a few weeks. He subsequently held a professorship in the Cincinnati Medical School and in 1839 succeeded Dr. Alexander H. Stevens in the Chair of Surgery of the College of Physicians and Surgeons in this city. He was surgeon to Bellevue and to the New York Hospital, and it was in the latter place that I served under him as House

Surgeon. He was then overwhelmed by an immense practice and his hospital time was often limited. I remember visiting the wards with him and as he entered the long room he said, "Dr. Weir, the by-laws state that as Attending Surgeon I shall see every patient at least three times a week." As he uttered these words he took a complete look around the whole ward and remarking, "I have done it," turned on his heel and went out. The next day, I should say in justice, he made an extra long visit.

Dr. Parker made two (perhaps more) memorable hits in surgery. He was the first to advise and do perineal cystotomy for the relief of intractable cystitis, carrying out the principle that he so earnestly insisted on of placing and keeping inflamed parts at rest. The second was the dawn of a great surgical epoch, for he was the first to operate on appendicitis.

He also was the first to insist upon dispensing with splints in the treatment of Colles' fracture of the radius, relying upon thorough replacement and the final retention by a bond of adhesive plaster, a plan recently advocated at one of our sittings here.

The next name on my list of Surgical Presidents is that of Dr. John Watson, born in Ireland in 1827, who was the partner and successor in practice to Dr. Alexander H. Stevens. He was for many years the Senior Surgeon to the New York Hospital. He was a testy and irritable man and was possessed of great learning and less knowledge, for there is a distinction between the two. From him we juniors acquired much by listening to his remarks, but of him in his operations it was said by the House Staff that we learned most from his blunders. This callow criticism was not confined to him, but was referred generally to the Attending Staff, and is yet made not only of the past surgeons but alas! even of those of the present period. Nothing is so keen as the judgment of a hospital interne.

Dr. Watson's treatment of specific disorders, thanks to his familiarity with the then new doctrines of the French school, was much ahead of his colleagues', and was very beneficial not only to his patients but to the House Staff and to the students who then walked the wards of the Hospital. His quickness of temper betrayed him and Dr. Markoe once into an excess of language that shocked us who knew them both to be strict members of the Presbyterian Church. The occasion was this: In the course of a difficult removal of a tumor from the neck by Dr. Watson in which there was a large exposure of the parts with a rather troublesome hemorrhage from a deep vessel, and when the artery had finally been caught up by the now disused tenaculum and was ready to be tied, Dr. Markoe, who as the surgeon of the other Surgical Division of the Hospital and hence was called upon to assist Dr. Watson, said, "Stop a moment, Dr. Watson, that we may observe the handsome anatomical display you have made in your operation. See how finely," he continued, "is shown the carotid artery, the jugular vein and ——" "Devil take all that," said Dr. Watson, with emphasis. "Will you tie that artery or not?" "Devil take it," promptly replied the other church member, "I will, since you are in such a devilish hurry." A pretty example, wasn't it, for us juniors?

But Dr. Watson was withal a just and kind man to all his subordinates, and his faithfulness and zeal in his professional duties commended him to his fellows, and he was properly honored in his election to the Presidency of the Academy in 1859. He died in 1863 from cancer of the rectum.

The next surgeon filling this office was Dr. Alfred G. Post. Very wise, very industrious, and so upright in his character. speech and doings that some said he bent backward. His labors never ceased. His interest was great in small things as well as in large matters. Every detail of surgery aroused his zeal; every society found him present with pockets always holding some minute specimens that he perhaps had removed that afternoon at his clinic; the details of which would be given in a very precise tone of voice and with most careful enunciation of each syllable, and uttered with the choice of the longest possible Greek words or combination of Greek derivatives to describe the disease or condition that the specimen illustrated.

Once he presented at the Medical and Surgical Society the thigh bone of a chicken that had a queer growth on it, which he pronounced an enchondroma. Dr. Metcalf, the most genial wit in the medical coterie of that time, interrupted Dr. Post by saying: "Pardon me, Dr. Post; you mispronounced the word; you should say of the specimen that it is a *hen*chondroma."

While we all admired Dr. Post's talents and zeal, we irreverent juniors would not always refrain from joking a bit about him. At another time in the Surgical Society after he had indulged in the narration of several cases much larded with long and Greek-laden words, I had the opportunity to show a case of refracture of the thigh, but as I did this (with one eye on Dr. Post) I stated that I begged to present an illustration of the operation of dysmorphosteodiaclasis, a word that I had found in a German surgery, and which with the help of my Greek dictionary I had carefully worked up for Dr. Post's particular delectation. As I uttered the jaw-breaker, which was the Greek version of "a refracture of a badly united bone," Dr. Post stuck his head forward with one ear inclined strongly to me and asked sharply as I finished: "Will Dr. Weir kindly repeat that word?" And as I did so he jotted it down and set to work to analyze it, which he did in a few minutes, and after the meeting joined us mildly in the joke then detailed to him.

Born in 1806 and a descendant of a well-known New York family, he became in course of time connected with the College of Physicians and Surgeons and with the New York Hospital, for these were the two goals of ambition to the able and young medical men of that time. There was no other noted medical college or hospital excepting Bellevue until a later period. His plastic work, like that of Dr. Buck, was very successful and meritorious, but he knew better how to use the scalpel than when to refrain from its employment. His removal from his old home and office in Seventeenth street to Madison avenue, near Forty-second street, in about 1860, illustrate our city's marvelous growth. His friends then all jeered at him by saying that he had become a country practitioner.

The last of the surgical holders of this chair is my friend, Dr. Joseph D. Bryant, who was elected in 1895, who is yet living to enjoy the additional honors that he deserves. The old maxim to say nothing but good of the dead does not encourage one to do the opposite and sling malice at the living. Were it even so, I nor any man could do or say aught but good of so able and so kindly a man as Dr. Bryant. Happy indeed would I be could I have the same regard from the profession.

My little endeavor to recall the surgeons that you have in the times past called to the presidential chair is finished, and there only remain a few words to be said on the work of the Academy during the past two years under my supervision. At first I feared lest the energy and activity of the Sections would possibly detract from the attention and attendance given to the stated meetings. But this has not been realized. The subjects presented at the general meetings have been of much interest and have been most acceptably received, as the increased attendance shows. Listening, sometimes enforced upon me by my position, has not only benefited me (much like a listless student by a didactic lecture), but has renewed again and again in me my appreciation of the enormous advances medicine and surgery have made in the last forty years, and particularly so in surgery, and I regretted exceedingly that it had not occurred to the Academy to join in the jubilee celebration of the fiftieth anniversary of the medical practice of Lord Lister, which was duly honored in London and particularly so in the pages of the *British Medical Journal* of December 13, 1902. It is hard to say which is the greater boon to surgery, anesthesia or antiseptic surgery. Owing to the rancorous contention of the friends of Morton and Wells the monument on Boston Common carries no name, but simply the words "To the discoverer of Anesthesia." I had rather it had been adorned with Holmes' witty suggestion, "To Either." But no such confusion rests with the promulgator of the antiseptic treatment of wounds. This treatment has saved thousands and thousands of lives; it has rendered possible previous impossible surgical procedures; it has developed the art of surgery beyond the expected, and it has stimulated the science of medicine to an incalculable degree. But it could not have done all it has done without anesthesia. If the soldiers of France would not go into battle without Ambrose Paré was with them, no more would they more willingly now go forth without the help of anesthesia, for the direst messages in the Civil War, in positions of the greatest straits, read often, "We are without food and chloroform."

Naught further remains now for me to say or do. Let me, therefore, close by thanking the Fellows for their support and attention during my term of service, and to transfer the gavel, the symbol of the office, to my distinguished successor, Dr. Andrew H. Smith.

THE YOUNG PRACTITIONER.*

BY ANDREW H. SMITH, M.D.,

OF NEW YORK.

THE kindness ever received from my colleagues and particularly during my early professional days, has always inclined me to take a special interest in those who are entering upon the trials and difficulties, the hopes and fears, the ambitions and the rebuffs, the successes and the disappointments that count for so much in the first years of professional life.

Except for a favored few who inherit a competency, we are obliged in some degree to measure our success by the standard, sordid though it may be, that applies to other avocations in life. In other words, we are successsful in proportion as the legitimate pecuniary returns we derive from our profession suffice for our actual requirements. There are other elements that enter into success, but if our profession does not yield a reasonable living those elements alone cannot redeem it from the stigma of failure.

Lofty aspirations, benevolent impulses, cheerful sacrifice of self are the *adornments* of professional life, but by themselves they neither feed nor clothe. We cannot draw checks against them nor will they pass current with the tradespeople with whom we deal.

Happily, however, the case of the young practitioner is not really discouraging even from the coldly practical side. It may be said that any man of fairly good ability who is properly educated and will work diligently along the lines to be presently indicated will almost certainly achieve a pecuniary return greater than the average obtained by embarking an equivalent capital in a business career. While brilliant successes in medicine are rare, absolute failures are extremely uncommon. When we add the social position which the practitioner enjoys by virtue of his profession the scale turns very decidedly in his favor.

It has been my fortune to be consulted very often by young doctors about to begin practice in this city, and who have asked advice, first as to location and then as to the general course of action tending most to insure success. To the first question I know of no better answer than the old advice to select a place where the poor will not be afraid to come and the rich will not be ashamed to be seen. This, of course, will be located on one side or other of the town and somewhat removed from the residential centers. But after all, accessibility to the poorer population is not so much a question of the locality of the doctor's residence as of the character of the man himself. Neither the poor man nor the rich strays by accident into a consulting room; there must be something in the doctor to attract him. If he is known to be considerate and careful in his attendance upon his humbler patients they will be emboldened to come to him wherever he may be.

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*From Inaugural Address as President before the New York Academy of Medicine, January 15, 1903.

And this leads me to insist that the young practitioner especially should give the same careful attention to the charity patient who intrusts his health or life to him as to the one who pays him the maximum fee for every visit. Only so can he completely discharge his duty, and only so can he win that respect and confidence that must underlie professional reputation as a necessary condition of success. Success thus grounded will be enduring and progressive, and in time will be certain to include a clientele in every way desirable.

From a superficial point of view it will sometimes appear that the interests of the practitioner and of the patient are at variance, and the test of the ethical fiber of the doctor will be his ability to realize and act upon the fact that the interests in question are *always* identical. In other words, whatever course is really best for the patient is best for his medical adviser. So absolute is this rule that the moment the latter begins to calculate what will be the result to himself of a rigid performance of his duty to his patient, that moment he is placing his own interest in jeopardy. A familiar example of this is when a physician seeks to make himself "solid" in any event by imposing excessive restrictions upon his client regardless of the sacrifices they may involve. The man who at the same time has a moderate bronchial catarrh and a note falling due at the bank will probably disregard the admonition that if he goes downtown he will do so on his own responsibility and at the risk of his life. He will take care of his note, and finding that no harm has come to him from the necessary exposure, will debit the doctor with a double entry charge of selfishness and bad judgment. How differently would the account stand if the doctor had said: "I am sorry that you are obliged to go out, and I think it involves some risk, but I appreciate the position you are placed in, and if you will go in a closed carriage and return in the shortest possible time I will share the responsibility of your doing so."

Losing sight of the principle referred to sometimes leads to a frequency of visits to a convalescent, which frequency is transparently due to solicitude for the doctor's bank account rather than for the patient's welfare. No amount of actual ability will protect a man from the consequences of this habit. While attentiveness during the severity of an illness is appreciated, too much of it as time goes on is also *appreciated.* When the doctor is asked the question: "How long shall your last prescription be continued?" he may infer that a daily visit has ceased to be welcome. Moreover, he may be pretty sure that he has already lost somewhat of the confidence and respect of his client.

Then comes the temptation, which some cannot resist, to charge an excessive fee to a transient patient on the "now or never" principle. The boomerang results of this, though sometimes deferred, are seldom escaped.

It is not to the advantage of any medical man to acquire the soubriquet of "Guinea-pig" or of "Dr. Come-again," as has been the case with two noted practitioners, one on each side of the Atlantic.

These are only a few illustrations of the many ways in which commercialism in medicine acts directly to the disadvantage of those who indulge in it.

But more important still is the ethical degeneration which it begets in the individual himself. There is a *descensus* more *facilis* than that to *Avernus* for the practitioner who abandons his professional standards for those that govern in the moil of trade.

The beginner in practice will be in error if he assumes that there is a certain amount of waiting to be done anyway, a certain period to be gotten through as patiently as possible. True, there is likely to be a considerable interval before he is overburdened with practice, but mere lapse of time will not bring business. The most it can do is to take something from whatever callowness of appearance may have survived the four or five years at the preparatory school, the four years at college, the four years at the medical school and the two years passed in the hospital. This waiting period of which we are speaking is perhaps the most important in the professional life. No one can afford to spend it in miscellaneous reading, in sports and games and in attendance upon social functions. It should be one of constant clinical study, the opportunity for which must be sought in public institutions and in the careful utilization of every case that comes under private observation. This is the time for notetaking, for which later there will be less leisure. Even if the notes should never be referred to afterward the practice of taking them promotes accuracy and quickness of observation, but they can be made of the greatest value in connection with subsequent reading.

The study of cases should be rather the study of patients; it should be exhaustive. In this it should conform to modern autopsical methods, which are no longer contented with merely investigating the cause of death, but which seek to learn all of pathology which the particular cadaver illustrates.

This period of waiting for private practice affords opportunity for attending the meetings of medical societies. As a means of education such meetings are of the greatest value. The papers read present necessarily the latest aspect of the subjects treated of, and the discussions bring out not only the experience but the reading of the members taking part in them.

These meetings also bring young men into contact with the profession and make them known to those farther on in the race. This is useful in many ways, which I need not specify. It is during this period also that the foundation for a specialty is to be laid, if such a limitation of practice is decided upon. The best results can be obtaned only by evolving the special out of the general practice, the latter falling away as it is gradually displaced by the former. As the specialist is obliged in the end to depend upon the general practitioner for his clientele it is essential that he should establish a reputation for fair dealing as the only basis upon which he can expect to have cases referred to him. The utmost punctiliousness in this respect is to be observed, avoiding even "the appearance of evil." A specialist who never "steals' a patient and who confines himself strictly to the malady he is expected to treat will find his services more frequently in requisition the more widely this is known to be his habit. This will not preclude a proper recognition of correlated affections, but for these the patient should be referred back to the family practitioner.

The great popularity which some specialists enjoy with the profession at large is due oftener to their fidelity to ethical requirements than to unusual skill in their particular branch.

Paradoxical as it may appear, there is such a thing as acquiring a large practice too quickly. This may result from some apparently lucky accident by which a young doctor is brought into sudden prominence, but more often it is by inheritance. Some of the worst failures to acquire a permanent success which I have ever known have been the result of succeeding to a business while not yet fitted for its responsibilities. In such a case there is no leisure for the study of patients. Work badly done does not mean experience gained, and even though the original equipment may have been good, each year is marked by retrogression instead of advance in solid professional attainment. Such men are apt to find to their sorrow that it is better to grow into a practice than to fall into one.

In summing up my advice to the young practitioner I would say: Select your location in the best section of the city that your means will allow; connect yourself with some clinic which will put you in touch with patients; see as much of disease as you can study exhaustively; treat every patient, no matter what his position, with thoroughness, kindness and consideration, recognizing his humanity even in the lowliest guise; place the interest of the patient always before your own; be true in every case to the obligations imposed by your profession.

Do these things patiently and persistently and success, that is, the highest kind of success, awaits you.

Meanwhile, if an established practitioner should offer you a partnership accept it if you choose, though my own judgment is against association of this kind. Conflict of interest is inevitable, and even assuming generosity on both sides it is liable to result in much bitterness of feeling. Besides, it is a powerful tonic to a young man to feel that he is on his own feet and not riding on the shoulders of another.

There is, however, one duty which every properly qualified practitioner owes to himself and to the profession, and that is to be a Fellow of the Academy. A man owes this to himself, since by a diligent use of the advantages afforded by the Academy he may profit to a greater extent than by any other single means within his reach. Besides attendance at the meetings of the Academy and of the sections, where he can participate in discussions that bring out the best the profession can afford, he has access to the second largest medical library in America, including over 1,000 periodicals statedly received.

It is true that the liberal policy of the Academy makes it possible to avail one's self of these advantages without becoming a Fellow. But duty to the profession requires that each one should bear his share of what is borne for all. At least, this is true of those who have progressed so far as to be no longer straitened for means.

But so long as motives of economy impose considerable sacrifices upon a colleague, he can with self-respect enjoy the privileges of the Academy without assuming the slight burden of membership. All such are welcome, thrice welcome, to the auditorium, the library and the banquet hall "without money and without price." Their appreciation of the professional advantages extended to them is a guaranty that ere long they will be foremost in doing for others what has been done for them.

There are many, however, who ought to be Fellows but have never joined our ranks, most commonly for the reason that they have never been asked to do so. This is manifestly our fault, and it is to be remedied by each Fellow taking it upon himself to present the subject to suitable persons among his friends. The list now comprises about eight hundred members. These are not enough to afford sufficient income to carry the Academy along with entire credit and complete usefulness. We are compelled to forego many things which would be greatly to the advantage of the work we have in hand. We need money, for example, for the purchase of books, that we may keep the library abreast of the newest literature. We want means to publish our transactions by which we keep in touch with other learned bodies and which we have had to suspend for the last five years.

Besides these there are many minor needs, which if they were supplied would add greatly to the general efficiency of the Academy.

The addition of two hundred members, besides increasing our strength and broadening our influence, would add to our annual income sufficient to meet all these requirements.

If each Fellow would aim to bring in one new member of the proper sort at least one out of every four would be successful, and the needed number would be procured. Let us determine that before another anniversary a thousand Fellows will answer to the roll call of the New York Academy of Medicine.

Just one word more in conclusion: The work of the Academy should enlist the active cooperation of the entire Fellowship. It cannot be done creditably by the initiative of the officers alone. Every Fellow should feel an obligation resting upon himself individually either to prepare suitable papers or to procure others to do so, and to be present at the meetings and take part in the discussions.

The relation between the Academy and its members is reciprocal. It honors them, and it is their part to honor it in return. The more illustrious they make it by their labors, the more the title of Academician will be prized and the greater will be the distinction it confers.

ORIGINAL ARTICLES.

FUNCTIONAL DISORDERS OF THE BILIARY SECRETION AND THEIR TREATMENT.

BY H. RICHARDSON, M.D.,
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FUNCTIONAL disorders of the biliary secretion may be primarily divided into three forms, a morbid excess, a morbid deficiency, and a vitiation of the bile. A morbid excessive secretion of bile may exist theoretically, but there is little or no evidence that it ever produces any serious symptoms, for, provided that the bile ducts are open, any excessive quantity will be eliminated into the intestine after meals, and the only pathological effect that might take place would be distention of the gall-bladder between the periodic emptying excited by food. This might produce diminished contractile power of the walls of the bladder followed by stagnation of the bile in the gall-bladder and the consequent formation of stone. Considering the chemical constitution of the bile, on leaving the liver it contains only about 2.5 per cent. of solid matter, while under normal conditions the gall-bladder absorbs a large proportion of the water, at the same time excreting mucus, pseudomucus and cholesterin, thus raising the solid matter to about 18 per cent. From this it would appear that nature had provided a very efficient preventive to excessive quantity of bile producing morbid conditions.

Deficiency of bile, often described as "torpor of the liver," is a much more common condition, producing morbid processes, which the physician meets almost daily in general practice.

The function of the bile is both excretive and secretive and consequently, if the formation is insufficient, two conditions will result, failure of excretion will embarrass the liver and failure of secretion will affect the digestion and absorption from the intestine, more especially the absorption of fats. It is certain also that at the same time vitiation of the bile formed also takes place. The active principles of the bile are the bile salts, glycocholate and taurocholate of soda, which hold in solution the excretory products, the cholesterin and coloring matters. Crofton has recently shown that glycocholic acid can be formed by the action of trypsin upon hemoglobin in the presence of glycogen or glucose, and suggests that the bile salts are formed in the liver by the action of trypsin or a trypsin-like ferment upon the hemoglobin in the presence of glycogen. That the bile acids are of special importance is shown by their being reabsorbed from the intestine, so as to be reutilized in the excretion of bile. Prevost and Binét, Rosenberg, Lewaschaut, Nissen, Rutherford, Noel Paton, Pfeiffer, and many others, have shown that the so-called cholagogues of the pharmacopœia do not increase the quantity of bile, though salicylic acid and turpentine appear to have some slight effect, and further that the bile acids are the only drugs which will increase the quantity of excretion.

Gall-stones are of very great frequency, often producing very severe symptoms. Kehr's statistics show that ten per cent. of adult persons in Germany are so afflicted, in England about five per cent., and judging from the Johns Hopkins autopsy reports about 7½ per cent. in this country. In many cases no doubt, the gall-stones lie dormant in the bladder and give rise to little or no trouble, but a proportion of cases suffer from remittant hepatic colic and others from occlusion of the gall-duct, causing very serious results. Heredity is said to be an etiological factor in the formation of gall-stones but apparently on insufficient grounds. They have been occasionally found in the new-born, 2.4 per cent. of the cases occur under twenty, 3.2 per cent. between twenty and thirty, 11.5 per cent. between thirty and forty, 11.1 per cent. between forty and fifty, 19.9 per cent. between fifty and sixty, and 25.2 per cent. over sixty years of age; they may be said to occur in one out of every four persons over sixty, due to the increased formation of cholesterin and the decreased expulsive power of the gall-bladder. Diet is said to be a cause. Mayo Robson and Brockbank regard a supply of nitrogenous food as a preventive, arguing that the bile acids are formed from proteid. In opposition to this theory is the extreme rarity of the disease in India, where the people are vegetarians; from Crofton's experiments it would appear that carbohydrate which produces glycogen is at least as important as nitrogenous food. Water containing lime has been accused because the calcium salts of bilirubin are the principal contents of a form of stones. But the addition of lime water to bile in quantities does not precipitate bilirubinate of calcium, provided there is a sufficient quantity of glycocholate of soda to hold it in solution; nor has it been proved that gall-stones are more frequent in districts where the drinking-water contains a quantity of lime salts; and further, the Carlsbad waters which have admittedly a curative effect upon gall-stones contain a considerable quantity of lime.

One cause of gall-stones no doubt, is stagnation of the bile in the gall-bladder, especially when there happens to be an infection. The bile under these conditions becomes thick, viscid and ropy. Solids are formed, which, acting as foreign bodies, become coated with either cholesterine or bilirubin salts. It is not improbable that in many cases the nucleus of the stone is mucus as the hollow in the center of the stone is usually empty, though in a certain number of cases it contains the *Bacillus coli communis* or the *Bacillus typhosus*. It is obvious, however, that if there was a sufficient quantity of glycocholate of soda and of water the precipitation of cholesterin or calcium salts could not take place.

There seems to be some connection between worry, excitement, anger, etc., and the secretion of bile as well as its elimination; anger and fear have been the immediate cause of an attack of jaundice. A dog, in the writer's possession, fought for some time with its companion shortly after eating, and in a few hours developed a severe attack of jaundice. It is well known to greyhound trainers that if the dogs take violent exercise after eating they are apt to develop jaundice. The pathology of this appears to be that the gall-bladder is full, awaiting the passage of the food from the stomach, and that the violent exercise forces the gall back into the liver and thence by the lymphatics into the blood.

In melancholia gall-stones are the rule, in mania they are practically unknown. Out of 243 autopsies there was not a single case of gall-stone in maniacal cases, while in the melancholic cases all had a pathological condition of the gall-bladder and in the large majority of cases gall-stones were present.

It is curious that gall-stones may remain in the gall-bladder for years without migrating into the duct or causing any trouble; as a rule the attacks occur at night and are preceded by severe pain in the lumbar region, probably in many cases brought on by distention of the gall-bladder, which causes nature to make an extra effort at expulsion. If the patient had taken a supper before retiring the gall-bladder would not have become so distended, having emptied itself by the normal stimulation of food. Stooping for any length of time also appears to bring on an attack.

Besides hepatic colic, gall-stones seem to have some connection with primary cancer of the gall-bladder; also they may set up an inflammation which ends in a fistula usually into duodenum or colon or through the diaphragm, in the latter case causing the patient to expectorate bile. Many nervous symptoms are produced by the heavy dragging sensation produced by a distended gall-bladder with stone which, if not recognized, causes the patient to be classed as a hypochondriac and to lose the sympathy both of his physician and friends.

Pregnancy and tight-lacing probably account for the greater number of gall-stone cases among women than among men, the proportion being stated as five to one. Pregnancy cannot be avoided, but tight-lacing can and should be condemned by the physician; both probably cause a reduction of the action of the diaphragm, free action of which materially helps to empty the gall-bladder.

In the treatment of gall-stone the surgeon seems to have usurped the place of the physician, the latter seeming to acquiesce without an effort. But the operation is dangerous and often has to be repeated; in the most simple form of operation, opening up the gall-bladder and evacuating the stones, etc., the mortality is probably a little over one per cent., but this operation is no guarantee against the return of the trouble, nor does there seem to be any reason why it should, the cause of the difficulty being the precipitation of cholesterin and pigment salts, and emptying the bladder cannot possibly affect a pathological chemical condition. Kehr performed 409 operations on 353 patients showing that one in fifty had to be operated upon more than once. In the more elaborate operations the mortality is from five to 25 per cent. The operation is therefore a very serious one and should not be recommended except under very severe conditions.

Typhoid fever, influenza, malaria and many other diseases are associated with a torpid condition of the liver in which the conjunctiva becomes slightly yellow, especially after any extra fatigue, the skin is of a dirty, yellowish hue and the general appearance is that of a pseudo-jaundice, the patient suffering from want of energy and mental depression. In these cases bile pigment will usually be found in the urine, not perhaps in a sufficient quantity for Gmelin's test, but by diluting tincture iodine with ten volumes of alcohol, using it as a layer test, at the junction of the two fluids there will be a faint or deep-green ring according to the amount of pigment present. Bunge, in his recent work, states that every form of jaundice is due to obstruction of the flow of bile and that so long as there is an unimpaired flow of bile into the intestine there can be no bile pigment in the urine; it follows therefore, that should bile pigment be found in the urine, even in very small quantities, the therapeutic efforts of the physician should be directed to the elimination of bile. On physical examination the liver will be found to be more or less enlarged while on inquiry it will be found that there is a distaste for fat on the part of the patient due to a probable malassimilation. Such a condition predisposes to the formation of gall-stones as well as to chronic constipation.

The treatment of this condition should have for its object the increase of the quantity of bile, and also of the glycocholate of soda, in order to hold the excretory components of the bile in solution and at the same time stimulate the gall-bladder to empty itself as often as possible so as to prevent stagnation.

To obtain these results a purge of calomel and soda should be given occasionally to relieve the intestine of undigested food and possible toxins which may accumulate, at the same time the patient should drink a large tumblerful of water containing five grains of sodium bicarbonate about half an hour before meals and an injection of a liter of normal salt solution every other day, well up into the colon, will be of great assistance. To increase the solvent powers of the bile, five-grain capsules of glycocholate of soda (Hynson and Westcott, of Baltimore) three times a day after meals will have the desired effect; in cases where stone is already present or suspected, the dose may be raised to ten grains. This drug occasionally causes nausea for the first day or two, which passes off if the patient continues the treatment.

The diet should be abundant, consisting principally of carbohydrates, but not excluding meats; the meals should be taken at regular hours, the last about an hour before retiring.

Exercise is an important aid, as the free and full action of the diaphragm materially assists the gall-bladder to empty itself, but if gall-stones are present it must be used with discretion.

Many of the pains radiating from the region of the gall-bladder are due to adhesions which can only be relieved by operation, for as the adhesions interfere with the contractions of the gall-bladder, they have a tendency to cause stone formation; in these cases, therefore, an operation is indicated.

Chronic constipation is often caused by torpid liver and by insufficient excretion of bile; in such cases the treatment just described will be found to give relief. It seems probable that by the administration of glycocholate of soda between the acute attacks of hepatic colic, not only will the formation of stones be prevented, but those already formed will be dissolved, preventing the recurrence of the attack. During the acute attacks, or when there is complete occlusion of the gall-duct, shown by alcoholic stools, the bile salts are not only not indicated but contraindicated, it being evident that to increase the quantity of bile at such times would increase the jaundice, but if the gall-duct is open, and especially, if bile pigment is present in the urine, the treatment here outlined is indicated.

Resuscitation Experiments.—A preliminary note on a method of resuscitation is published by G. W. Crile (Cleveland Med. Jour., Jan., 1903). By the combined use of intravenous infusions of adrenalin, artificial respiration and rhythmic pressure on the thorax over the heart, animals "dead" as long as fifteen minutes were restored to life. Animals decapitated were made to live 10½ hours.

THE TREATMENT OF TUBERCULOSIS.

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FORMERLY LECTURER ON HYGIENE IN THE DENVER COLLEGE OF MEDICINE.

The appalling proportion to which the figures of mortality have been raised by the ravages of tuberculosis, each moment brings the question of treatment before us in the most imperious manner, while new remedies are becoming more numerous every day. What therefore should be the basis for the treatment of this disease at the present time? Tuberculosis like all other communicable diseases presents two factors for consideration: the causative agent whose biological and morphological characteristics are well known to us, and secondly the individual in whom this agent is present, whether by an inherited predisposition or acquired, in other words the patient under treatment.

All rational medication to be complete and truly efficacious should be directed toward these two factors, and should take into consideration all the elements presented in a given case. In considering the newer remedies employed in the treatment of tuberculosis we find that all possess some real value, but are unfortunately only directed toward some special phenomenon of the disease, and not against the entirety of the elements, that are to be combated. It is insufficient for a remedy to simply fit peculiar indications, for in this way it does not respond to the purpose for which it is put forth. Among the remedies offered we find one class that is intended to ameliorate the symptoms and thus restore the patient, by increasing tissue resistance and thereby limiting the invasion of the germ. The other class are intended to have a specific action: they are bactericidal or antitoxins. The rational method of treatment, however is one that possesses at the same time a combination of the foregoing.

That is to say, it should proceed from both a dynamical and from a specific point of view. Usually new remedies for the treatment of tuberculosis assuring an immediate, radical and absolute cure for this terrible malady are exploited and accepted without sufficient thought being given to the causative agent and its toxins or to the individual in whom they are engrafted. We must strive to counteract this tendency and school ourselves to conduct our minds into the paths of truth and sound appreciation of the remedies so offered. Here for example we have an anemic subject; the bacillus of Koch has invaded his tissues, remaining as yet in a latent stage. If this subject does not get some sort of treatment the anemia will be emphasized, digestive activity will diminish, strength will disappear, assimilation will be reduced to the minimum, there will be absolutely a failure of the entire organism. What must be done for this patient? First and foremost renew the organization by favoring nutrition. It is here that medication directed to produce these effects enters into play—hygienic medication, notably arsenic in its most assimilable form, soda cacodylate, also iodine, cod-liver oil, etc. Thus the bacilli will be kept in check, their action neutralized and while the equilibrium between resistance and forfeiture is maintained our subject will live. But an organization already affected must pay a large tribute to a multiplicity of causes, such as physiological decline, worry, repeated attacks from bronchitis, influenza, rubeola, scarlatina, etc., and there comes a fatal moment when the bacillus will triumph, so that the treatment directed toward the subject alone, although it appears efficacious, has only an ephemeral action. It is deficient, for it does not attack the essence of the evil—the bacillus or its toxic products. These facts are true of all methods which simply act on special phenomena of tuberculosis. In the first place, preeminently, we consider *hygienic treatment the base,* the indispensable adjuvant of all medication, without it we cannot make permanent progress and finally become stranded. The simplest manner in which the hygienic ideal is to be realized is in the construction of home sanatoria, that is cottages arranged in villas and in suitable sunny climates. Here, in fact here alone, can be obtained not only that hygienic condition, but the perfect moral state of the individual so essential for the successful treatment of tuberculosis. In these villas should also be constructed a larger building of many rooms according to the population, and this reserved for the sick who are incapable of governing themselves, the impulsive and the headstrong. These require constant personal supervision. Under these conditions the medical remedies, notably the arsenicals, will give good results in the lymphatics. It seems to act in these cases as a anemic, chlorotic, and in those with enlarged veritable spur to the organism increasing the appetite and hastening lymphatic dissolution. On the contrary the results in ulcerous or cavernous tuberculosis are nil. Soda cacodylate should remain in the therapeutic arsenal, as it meets all the indications of arsenic and in this shape is more assimilable and easy of administration. It is especially indicated in those predisposed to tuberculosis, those born tuberculizable, and in incipient cases of this malady. The foregoing remarks also apply to certain artificial serums which have been recently extolled, they also belong to the class of reconstructants, as they are entirely lacking in bactericidal or antitoxic power. Natural serums are to be preferred if for no other reason than that the same therapeutic effect can be obtained by one-third the dose of artificial serum required. This is due no doubt to the intimate composition of the natural serum. Following the favorable results obtained by feeding dogs suffering from tuberculosis on raw meat, quite an impetus was at one time given to this method of treatment. But it was tried in the usual manner, entire dependence placed in the meat or the juice expressed therefrom, and, so far as I can learn, for a short time only. The usual verdict was given—inefficient.

Experimental research demonstrated that this meat juice did not act as a nutrient but as an antitoxin, that this antitoxin would neutralize in the system the effects of the tubercular toxins. Undoubtedly there is virtue in the meat juice treatment conducted under favorable auspices. It must be remembered that meat juice becomes quickly tainted and rapidly toxic. The use of antituberculin recalls what once promised to be a popular form of treatment, that is the use of a serum manufactured from the blood of the so-called refractory (to tuberculosis) animals. It has been claimed that the blood of certain animals confers immunity against tuberculosis and may even cure it. This hemato-therapy may yet solve the problem of the cure of tuberculosis. In selecting treatment we must not fail to distinguish between tuberculosis and phthisis. A phthisical patient is one in whom the bacillus of Koch, after having begun its progressive march, causes the suppurative destruction of the invaded cells, and in this destroyed mass are encountered staphylococci, streptococci and pneumococci, destroying tissue with a rapidity equal to that of the bacillus of Koch. This is where hectic fever causes death; this is consumption. If by some magic power we should be enabled to destroy the tubercle bacillus our patient would nevertheless succumb to the mixed infection. In these cases a remedy that is at once dynamical and bactericidal would effect a cure. Tuberculosis is a malady in which the bacillar agent acts as a destructive force, but it is equally aided by other destructive forces provoked by other causes, as anemia, influenza, etc. Now, after setting forth these generalities, what properties are demanded of a therapeutic agent arrayed against this bacillus? We admit the reconstructing, regenerating properties of the general tonic remedies, cacodylates, lime phosphites, cod-liver-oil, etc.; we even admit the antitoxic properties of meat juice, but are we justified in saying that each of these agents fulfils the double purpose which we seek to assure the cure of tuberculosis? No, they are either simple reconstructants or antitoxins. Observation proves that all serums are dynamogenic in their action and consequently general reconstructants. We see this demonstrated every day in the employment of artificial serum (saline solution) in cases of serious hemorrhage or in traumatic shock following an operation. This dynamogenic action is fully recognized. Therefore it seems that the treatment of tuberculosis, par excellence, lies in the use of a serum possessing in a marked degree both dynamical and bactericidal powers coupled with climatic hygiene.

Second International Congress of the Medical Press.—This Congress will be held in Madrid, April 20 to 22; the Congress of Medicine to follow April 25 to 30. The same facilities as to lodging, traveling expenses, etc., will be afforded those attending this congress, as to members of the Medical Congress. Full particulars may be obtained by addressing Dr. Larra Cerezo, 17, Leganitos, Madrid.

A CONTRIBUTION TO THE SURGERY OF THE INTERNAL SAPHENOUS VEIN.

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THE simple procedure of ligating the internal saphenous vein high up in Scarpa's space for varicosities occurring along the course of the vein has become widely popular during the last few years. Its popularity is undoubtedly due to its simplicity, and as a rule its efficacy.

The operation is easily performed with cocaine anesthesia. The vein is readily accessible, and is usually found through an incision of an inch or an inch and a half. The fact, however, that occasionally the varicose condition did not improve after this procedure and again the annoying and tedious delays which the author has experienced and witnessed in others in exposing the vein for ligation led him to investigate the anatomy of the internal saphenous vein with two objects in view: (1) to discover the possible sources of error which might occur in practising the operation as now taught; (2) to devise, if possible, some guide or landmark which would fix a point at which the vein could be exposed and ligated without possibility of error.

The experiments were performed on 50 subjects, and in detail were as follows: (1) the operation, as now performed, was done on each subject as a preliminary procedure; (2) the skin was reflected back, the vein and its branches exposed, and observations made upon the result of the preliminary ligation; (3) the point at which the vein should be ligated was fixed and its relations to surrounding landmarks observed.

The results obtained were rather interesting.

First, regarding the preliminary ligature: As usually performed, the author succeeded in ligating the vein at the proper point in 70 per cent. of the ligations, the other 30 per cent. were distributed between the internal femoral cutaneous, the external femoral cutaneous, the internal saphenous vein below these two branches, and in one instance there was a double internal saphenous vein, one lying above the other and forming the main trunk about one-half inch below the saphenous opening.

The greatest source of error lies in the internal femoral cutaneous. Twenty per cent. of the errors were found here. As McClelland observes: "Many of the tributaries of the internal saphenous are as large as the vein itself, especially on the inner side of the thigh."

In six per cent. of the cases the vein was ligated below the femoral branches. The external femoral cutaneous was ligated once, and the anterior portion of the internal saphenous once when it occurred as a double vein, one portion lying above the other. In observing the relation of the line of incision to these errors it was found that the usual incision is too low down and too far toward the inner aspect of the thigh. My preliminary incisions averaged an inch too low and too far in.

It will be readily seen that the proper point at which to ligate is that portion of the vein which lies between its last tributary and the saphenous opening.

This space is about three-quarters of an inch in length, varying somewhat in different subjects. A circle about the size of a five-cent piece ought to fix the limits within which we can expose this portion of the vessel.

The author found that the end of a line 3½ inches long projected from the spine of the pubes at right angles to Poupart's ligament would always fall within this circle. The utility of this guide has been demonstrated by the author and others in a number of cases, and has proved efficient in every case.

The following procedure is recommended: Find the spine of the pubes. From this point project a line 3½ inches long at right angles to Poupart's ligament. The end of this line marks the point for the center of the incision which should be about one inch long and parallel with the fold of the groin. In retracting the edges of the incision, retract the upper edge so as to ligate as near the saphenous opening as possible.

EMPYEMA OF THE ACCESSORY SINUSES OF THE NOSE.*

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OF NEW YORK.

EMPYEMA of the accessory sinuses of the nose is a condition so far-reaching in all its ramifications that the time at my disposal will permit only of a very brief outline of its salient characteristics. I am sorry to say, at the very outset, that it is unavoidably imperative that I should enter upon a short résumé of the essential surgical anatomy of the regions under discussion.

If one were to ask what are the accessory sinuses of the nose, I suppose that a majority of us would reply that they are the maxillary, the frontal, and the sphenoidal sinuses. It should be remembered, however, that the air cells of the ethmoid, constituting the ethmoidal labyrinth, are inseparably associated with those cavities anatomically, physiologically, and pathologically; and that, clinically, they must be regarded as essential components of the sinus-system of the upper respiratory tract. So important is the rôle they play in pyogenic inflammation in these regions that failure to appreciate their intimate association with the adjacent air spaces, and their vulnerable exposure to infections, must pervert our comprehension of the conditions that induce and the causes that prolong nasal pyorrhea.

The ethmoid cells are naturally divided into two sets: an anterior group and a posterior group. The former are closely associated with the frontal and the maxillary sinuses, and their orifices discharge anteriorly into the middle meatus. The posterior group are contiguous to the sphenoidal sinuses and discharge posteriorly into the superior meatus and the spheno-ethmoidal recess. As a rule, in health, no direct communication exists between the anterior and the posterior ethmoid cells.

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* Read before the Society of the Alumni of Bellevue Hospital, December 3, 1902.

Ethmoid cells often extend into the roof of the orbit, beneath the floor of the frontal sinus. They are found also in the orbital roof altogether behind the frontal sinus. Such cells frequently extend backward as far as the apex of the orbit. Ethmoid cells are found also beneath the floor of the orbit, between that cavity and the maxillary antrum.

Manifestly, the ethmoidal labyrinth is an extensive series of air cells, separated by thin barriers from the anterior cranial fossa, the orbital cavity, and the maxillary antrum. Obstruction of their ostia from any cause may readily give rise to symptoms of pressure, and, under favoring pathological conditions, result in manifold disaster.

The frontal sinuses begin to develop at the end of the first year and may be recognized as distinct air cells above the naso-frontal suture from the sixth to the eighth year. It may be assumed that they attain their full development by the thirtieth year, although it is known that their size increases in old age, probably by virtue of shrinking and absorption of contiguous parts. The frontal sinuses are two in number and bilateral. In certain crania, however, one sinus only is present; and, in more exceptional instances, the frontal sinuses are wanting altogether. Turner* found, in 240 European crania, both frontal sinuses present in 199, the right sinus absent in nine, the left sinus absent in 14, and both sinuses absent in 18. His investigations indicated, moreover, that absence of one or both sinuses was more commonly observed in the female than in the male.

Normally, the frontal sinuses are separated from one another by a complete bony septum, which may be perforated by disease. Turner* examined 355 skulls with especial reference to the position of the septum. In 277, he found it in the mesial plane. In 78 crania the septum deviated, in 47 to the right, and in 31 to the left. In all, excepting 13 crania, the lower end of the septum was mesial. In these 13 instances, the lower end deviated to the right eight times, and to the left five times, and the extent of the deviations varied from two to nine mm.

The size of the frontal sinuses varies considerably. The smallest measured by Turner was 18 mm. high, 13 mm. broad, and 5 mm. deep. The largest one measured by him was 45 mm. high, 60 mm. broad and 25 mm. deep. A frontal sinus may extend backward to the apex of the orbit and laterally to the external angular process. The frontal sinuses discharge into the middle meatus through the fronto-nasal duct, or by way of the infundibulum. The ostium is found near the median plane in the most dependent part of the sinus, and it is always present. Its caliber varies from four to eight mm.

Partitions, subdividing the frontal sinuses into several more or less complete chambers, are too commonly observed to be neglected. The frontal sinuses are separated from the anterior cranial fossæ, the orbital cavities, and the anterior ethmoid cells by thin walls of bone. By erosion of those walls and direct transmission, or by way of the pores in the bone, or the lymphatics, or the blood vessels, pyogenic infection may travel from the frontal sinuses to the intra-cranial contents, to the intra-orbital structures and to the ethmoid cells.

Known variations in the size of the frontal sinuses and in the position of the septum impose upon us the obligation of a sure guide to their position, whenever the question of operative interference arises. Almost without exception, when they exist at all, the frontal sinuses will be found immediately underneath the triangles constructed as follows: Connect the supra-orbital foramina or notches by a horizontal line, drop from its mid-point a vertical to the fronto-nasal suture, and complete the triangles by lines drawn from the naso-frontal end of the latter to each respective supra-orbital foramen. Thus two triangles are constructed above the root of the nose, through which even the smallest sinus may be opened. The anterior wall of the sinus may be eight mm. in thickness, although, as a rule, it is very much thinner. In operating through the anterior wall of the sinus, our course should be directly backward. If, however, we have traversed in this direction eight mm. of bone without opening the sinus, it would be wise to change the course of the excavation to downward, backward, and inward, toward the uvula. Thus, opening the anterior cranial fossa may be avoided, while our explorations would expose even the smallest sinus, or, in the absence of the sinus, open into the anterior ethmoid cells.

Properly speaking, the maxillary antrum does not exist at birth. It attains its fullest development about the thirtieth year, and in the different crania great variations in its size are noted. It discharges, usually through a single ostium, into the middle meatus near the junction of the middle and posterior thirds of the inferior turbinated bone. This orifice is found in the upper portion of the inner wall of the sinus, underneath the roof; and, evidently, it is not designed for drainage of the cavity. It is so situated that pus from the frontal sinus, and the anterior ethmoid cells, may readily pass through it into the antrum—a condition that is not uncommonly observed in practice. The infra-orbital nerve traverses the roof of the maxillary antrum, usually through a canal in the bone. In certain crania, however, the nerve is not so protected, and it may be wounded during curettage of the sinus, unless proper caution be observed.

Like the frontal sinus, the maxillary antrum may be subdivided into two or more additional cells by partitions that are more or less complete. However large or small the antrum may be, it is almost invariably situated immediately above the first molar tooth.

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* "The Accessory Sinuses of the Nose," A. Logan Turner, 1901.

The sphenoidal sinuses, usually two in number, separated from one another by a mesial septum, are located in the body of the bone and open into the superior meatus and posterior ethmoidal recess, by an ostium in the upper portion of the anterior wall. This orifice also is not properly located for drainage. There may be a single cavity representing the sphenoidal sinuses, or the sinus may be absent altogether. In certain crania, air cells exist in the wings of the sphenoid. The entire system of accessory sinuses is lined by a thin mucous membrane, having mucous glands and ciliated epithelium.

Inflammation of the accessory sinuses may be either primary or secondary, acute or chronic. The greater number of cases are secondary to some intra-nasal condition. Many acute cases terminate in complete resolution, even though the inflammation may have been pyogenic in character from the outset. Others become chronic; and it is probable that the greater number of chronic pyogenic inflammations in these regions begin as an acute infection. The exanthemata, diphtheria, acute coryza, trauma, and especially, influenza, are the causative factors of nearly all cases. Exception should be made, however, of pyogenic inflammation in the maxillary antrum, for it is most commonly due to extensive caries of the teeth.

The maxillary and the frontal sinuses are most commonly infected, the former taking precedence of the latter. Very often two or more sinuses are involved. Infection of the maxillary sinus may extend to the frontal sinus of the same side. More frequently, however, pus from the frontal sinus gravitates into and infects the subjacent maxillary sinus. Whenever the frontal sinuses are the seat of pyogenic inflammation, the existence of a similar condition in the anterior ethmoid cells should always be anticipated. In a certain number of cases, all of the accessory sinuses of the nose are involved in the pyogenic inflammation, either simultaneously, or in sequence.

Perhaps the most universal subjective symptom observed in pyogenic inflammation in these regions is pain. The pain varies in intensity from a dull, uncomfortable sensation of pressure and fulness in the region of the inflammation to excruciating and almost unbearable neuralgia. The pain may be continuous, or there may be remissions, alternating with acute exacerbations of a distinct periodic character. The periodicity may be so marked as to lead one to erroneously diagnosticate malarial poisoning.

In maxillary sinusitis, the pain is usually located beneath the orbit; in ethmoid disease it is in the frontal region and behind the eyeball; in sphenoidal sinusitis it is deeply seated behind the eyeball, or in the vertex, or in the occiput. There are variations from these rules, however, the best known being those of maxillary sinusitis in which the pain is chiefly frontal, and those of frontal sinusitis in which the site of the pain is much lower down than one would expect to find it.

Tenderness on pressure over the affected sinus is generally present. In maxillary sinusitis, a certain degree of deafness on the same side and tinnitus aurium are often noted. The patient may complain of an offensive odor in his breath, which he alone may detect, although, in chronic maxillary empyema the observer may be able to distinguish the offensive odor.

The objective symptoms are those of a more or less intense rhinitis and a purulent discharge from the nose, which also varies much in amount. Nasal pyorrhea may be profuse, necessitating frequent blowing of the nose and expectoration, to such a degree that the patient is digusting to himself and offensive to others. When the maxillary sinus is involved, pus appears in the middle meatus two-thirds of the way back from the anterior extremity of the inferior turbinated, at the site of the natural opening into the cavity. If the discharge be profuse, it will have spread pretty well over the lower part of the nasal chambers. In such instances, the nose may be cleansed by syringing or spraying, after which the patient may hold his head in such position that the ostium of the suspected sinus may be low enough to allow pus to gravitate through it. If then pus appear well back in the middle meatus, its source may be divined with considerable accuracy.

Pus from the frontal sinuses and anterior ethmoid cells appears high up in the anterior portion of the middle meatus between the middle turbinated and the external wall of the meatus, flowing forward and downward; and it is seen also, with the rhinoscopic mirror, flowing backward through the middle meatus toward the throat, concealed from anterior inspection by the middle turbinated bone.

Pus from the posterior ethmoid cells and the sphenoid sinus may be discovered by rhinoscopic examination in the superior meatus flowing backward toward the throat.

Transillumination of the maxillary and the frontal sinuses by the electric light was added to our measures for diagnosticating empyema in those cavities by Heryng. Transillumination of the ethmoid cells and the sphenoid sinus is not practicable. Under no circumstances, however, may we rely entirely upon the findings of transillumination. It is a valuable adjuvant to other means of diagnosis, and one that should never be omitted in the study of maxillary and frontal sinusitis.

Edema of the cheek and about the eye and forehead, and inflammatory swellings in those regions are observed in certain cases of antral and frontal sinus suppurations. Congestion, or inflammation of the conjunctiva, photophobia, exophthalmos, and, in occasional serious cases, phlegmon of the orbit, and irritation or inflammation of the retrobulbar section of the optic nerve, have been observed in chronic empyema of the accessory sinuses, including the maxillary. In a small percentage of cases, meningitis and cerebral abscess have added their symptomatology to the clinical picture. The usual symptoms of a more or less intense septic invasion of the general system are observed, especially in the more aggravated cases.

Occurrence of the disturbances that have been mentioned may be very properly ascribed entirely to the existence of empyema in one or more of the accessory sinuses of the upper respiratory tract. Nevertheless, it is important to recollect that purulent inflammation may exist in those cavities without exciting any of them. It is difficult to conceive that a purulent discharge from the nose may be absent under such circumstances; but it is a fact that its existence has not been noted in certain demonstrated instances of purulent sinusitis. These are anomalous cases. The patients perished of some other malady and the unsuspected sinus disease was discovered at the autopsy.

The natural course of acute inflammation of the accessory sinuses is toward complete and permanent recovery. Chronic sinusitis on the other hand, is always a process that runs a protracted course without manifesting any tendency toward spontaneous cure. The behavior of both acute and chronic cases will be influenced materially by the degree of patulency of the orifices of the various sinuses. When they are obstructed by inflammatory swelling, by intra-nasal growths or deformities, and exit through them of the products of inflammation is seriously impeded, we may anticipate a proportionate aggravation of the symptoms and the danger to life, and disappearance of any tendency toward amelioration of the pyogenic process.

Pyogenic infections of the frontal sinuses and the ethmoid labyrinth are more dangerous to life than similar infections in the sphenoidal or the maxillary sinuses, for anatomical reasons that have been mentioned already.

In general, the treatment of acute cases may be restricted to measures that combat the disease upon which they depend, and to intra-nasal remedies that diminish congestive obstruction in the nose. Our aim must be to restore patulency to the natural ostia of the sinuses, in order that retention of discharge in them may not take place. In acute inflammations it may be attained by the use of mild alkaline sprays containing adrenalin, and perhaps a little cocaine, together with steam inhalations containing menthol or compound tincture of benzoin. Very hot compresses, or ice bags over the frontal and maxillary sinuses may be useful. In acute maxillary sinusitis resulting from disease of the teeth, the alveolar abscess must be evacuated and the diseased teeth extracted at the outset. For some reason, incomprehensible to me, dentists object to removal of ulcerated teeth during the stage of acute inflammation. Whatever they may say about it, in acute maxillary sinusitis of dental origin, the offending teeth must be extracted early. If amelioration of the symptoms be not detected within a week or ten days after beginning the above outlined treatment of acute sinusitis, we may resort to the more radical measures, which are always indicated in chronic empyema.

Whatever may have been the cause of chronic empyema of a maxillary sinus, the surgical indications for treatment are twofold, namely drainage and disinfection. If disinfection has been thorough and permanent, temporary provision only need be made for drainage. But failure to secure such disinfection will impose upon us the necessity of preparing a way for the escape of the sinus contents during an indefinite period. To my mind the most efficient means at our command for disinfecting the accessory sinuses is curettage, followed by liberal lavage with some sterile and moderately antiseptic fluid like saturated solution of boric acid, and finally, in bad cases, by an application of pure carbolic acid. (It is not necessary to neutralize the carbolic with alcohol.)

In order that we may use the curette effectively in the maxillary antrum, we must approach that cavity by another route than the intra-nasal, or the alveolar. In fact, the sinus must be entered through a sufficiently large opening in the anterior wall, within or external to the canine fossa. Many cases of empyema of the antrum of Highmore have been cured by draining and washing through an alveolar aperture. But it is demonstrable,* I think, that this method is not surgically the best, even when empyema is a consequence of dental caries and alveolar abscess; and that cases so managed require an unnecessarily prolonged supervision. Through the anterior wall of the sinus we may reach with ease every portion of its interior, and the wound in the soft parts under the upper lip will remain patulous a sufficient time for the necessary lavage and drainage. In my experience, it is not advisable to irrigate the antrum, even with the mildest solutions, for a longer period than four or five weeks subsequent to the operation. I am convinced that irrigation of these regions with irritating antiseptic solutions should never be practised. Should resolution be delayed after a month of this treatment, and especially, should pus formation in the antrum be marked still at the end of that period, a large opening for drainage may be made through the inner wall into the inferior meatus (Luc or Caldwell-Luc). Through this opening the sinus may be irrigated as circumstances require, and so long as it remains open, the possibility of accumulation of discharges in the antrum cannot exist.

In the management of chronic suppuration in the accessory sinuses, obstructions in the nose should be removed as a preliminary treatment. In frontal sinus and in ethmoid disease the anterior half of the middle turbinated bone should be excised with the cold snare, or cutting forceps. In sphenoid sinus disease, the entire middle turbinated may be removed to clear the intra-nasal approach to the sinus.

Direct treatment of the frontal sinus by the intra-nasal route is so delicate and so dangerous a procedure that it may not be recommended. In any case of important suppuration in the frontal sinus, the safest and by far the most satisfactory approach will be found in an external operation. The chief objection to an external operation is that it leaves a scar in a conspicuous place; but that objection is more than counterbalanced by the advantages gained by such choice, and after all the deformity need not be marked.

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* Lermoyez, British Medical Journal, August 30, 1902, p. 580.

The most reliable guide to the frontal sinuses has been given. My preference is to approach them through their anterior wall, because in that way we gain a much more unrestricted access to every part of the sinus than is possible by any other route. In frontal sinus cases, perfect curettage of every nook is essential, the greatest enlargement of the channel of communication with the nose compatible with safety must be secured, and the anterior ethmoid cells destroyed (Ogston-Luc). Injury to the pulley of the superior oblique muscle and consequent diplopia have arisen both from extension of the external wound too far backward along the roof of the orbit, and from too vigorous use of the curette upon the floor of the sinus. After such an accident, it is not possible to restore the ocular movements to normal, although the diplopia may be overcome by operations upon the eye muscles. Kuhnt's operation, designed to obliterate the frontal sinus by removal of the entire anterior wall and allowing the soft parts to attach themselves to the remaining walls of the cavity, is, in a considerable number of cases, an anatomical impossibility. Moreover, so striking is the resulting deformity that I would not select it in any case.

Suppuration in the ethmoid cells is attacked preferably by the intra-nasal route. The cells may be opened through the frontal sinus, and through the orbit; but these routes may be selected only when there is either a complicating frontal sinusitis or orbital abscess, and even then the intra-nasal operation should still be performed. Careful search with a probe may reveal the site of the ostia of the anterior cells; but whether they are discovered or not, the cells may be opened safely by careful use of cutting forceps and curette. The anterior half of the middle turbinated having been removed, the anterior cells may be opened by working carefully in an outward and slightly upward direction, well below the fronto-nasal suture and about on a level with the palpebral slit. Having opened the anterior, the posterior cells may be easily approached and opened. The floor of the cells should be cut away as far as possible, and the remaining walls gently curetted. Whenever the infection has proven to be a persistent one, it will be advisable to paint the walls with pure carbolic acid from time to time, so long as a disposition to relapse is in evidence.

Empyema of a sphenoidal sinus yields to treatment conducted in accordance with the same general principles. The sphenoidal sinuses should be approached by the intra-nasal route, after removal of the middle turbinated bone. They have been attacked by way of the orbit and through the maxillary antrum; but, for obvious anatomical reasons, such operations are not recommended. Having located the ostium in the anterior wall, and having explored the sinus with a probe, sufficient bone may be cut away from the anterior wall with a punch forceps to provide free drainage of the sinus. Gentle curettage, and disinfection with carbolic acid may be required.

The results of treatment conducted in accordance with these specifications are satisfactory, although often it is not possible to check suppuration in the accessory sinuses. Complete eradication of pyogenic infection from them is one of the most difficult tasks in surgery.

58 West Fortieth Street.

A NEW SPUTUM SLIDE.

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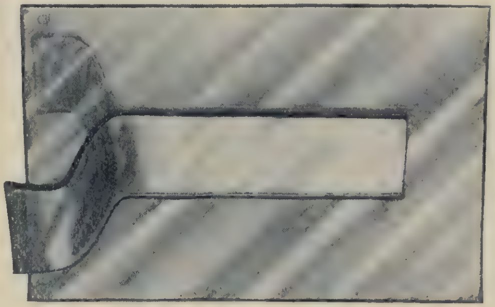
Most laboratory workers, and especially those who make frequent examinations of tuberculous sputum, have long wished for a more cleanly method than that in vogue for the macroscopical and unstained microscopical low dry lens examination of sputum. The method in common use is the following: A glass plate, four by five inches, and an ordinary microscopical slide are needed. The sputum, or a small amount of it, is placed upon the glass plate, and by means of the slide, which is held between the thumb and index finger, is pressed out into a thin layer. A search is now made for suspicious grayish-yellow spots. These may be bits of food, bits of pus or epithelium, small masses of germs such as leptothrix buccalis, or pieces of elastic tissue. The experienced worker soon learns to distinguish, with a fair degree of certainty, between bits of food and elastic tissue. However, he makes certain by transferring the plate to the stage of the microscope and examining the specimen with the low dry lens, most of the light being shut off. This is the quickest and easiest means of recognizing elastic tissue. It is unnecessary to argue the importance of this finding.



The only drawback to this method is that the microscopical slide is so small, and in such intimate contact with the glass plate through most of its surface, that when the sputum is pressed out, it runs along the under edge of the slide and is likely to smear the examiner's fingers. This feature makes the examination of tuberculosis sputum repulsive and dangerous. In the subsequent cleaning of plate and slide one is also liable to get sputum on the fingers.

To overcome this difficulty and to make it possible to examine a larger amount of sputum at once, I have devised the following simple, easily made slide.

From an ordinary thin window pane, by means of a glass cutter's steel, slides 5 in. long by 1⅛ in. wide are cut. (The dimensions may be varied as desired.) One end of such a slide is slowly heated in the blast, then bent to furnish a handle as indicated in the cut, and allowed to cool slowly. If the cooling is too rapid it is likely to crack. A little experience is necessary to make these slides successfully. By means of a file lubricated with sweet oil the sharp edges of the slide are rounded off. The raised handle keeps one's fingers from coming in contact with the sputum. The bent glass slide is also useful later in scraping the sputum from the glass plate.

The practical value of such a slide is daily demonstrated in the clinical laboratory of the University of Michigan. Manufactured by Bausch and Lomb Optical Co., Rochester, N. Y.

MEDICAL PROGRESS.

SURGERY.

Post-operative Ventral Hernia.—The many and varied methods of suture of the abdominal wall are in themselves positive proof that no really satisfactory single method of suture has yet been devised. Ventral hernia appears to follow the opening of the abdomen under any conditions in a certain number of cases. O. WOLFF (C'blatt f. Chir., Dec. 13, 1902) suggests the following as the cause. If the convalescence of each laparotomy is followed and a careful history is kept, it will be found probably true that in all cases of post-operative hernia the patient suffered during the first two or three days after the operation from meteorism, which in itself is sufficient to break down almost any method of suture. The various stitches are torn apart and the suture-line more or less opened by the enormous distention from the inflated intestines. The skin sutures for the most part appear intact, making the wound appear as if the union had been primary, whereas, in fact, the deep suture-lines are open. It would appear, therefore, that the avoidance of meteorism is the secret of really successful closure of the abdomen.

Beta-Eucaine, its Advantages Over Cocaine.—Although this subject has received already a great deal of consideration, it does not seem as yet to be thoroughly thrashed out. Dr. MARCINOWSKI of the Woltersdorfer Schleuse Sanatorium (Deut. Zeitsch. f. Chir., Oct., 1902), reports that in all minor surgical work local anesthesia is much better obtained by means of this drug rather than cocaine or ethyl chloride. Some of the reasons for this conclusion are as follows: It is absolutely non-irritant unless too strong or incorrectly prepared, in other words, the solution must be isotonic with the body fluids and of the body temperature. It is 3.75 times less poisonous than cocaine or alpha-eucaine. The vaso-dilatation reaction is very moderate. In the eye, it is peculiarly useful, since it is neither myotic nor mydriatic, nor has it any influence on the accommodation of the eye or in its reaction to the influence of light. The hyperemia which follows beta-eucaine injection is exceedingly desirable in ocular operations, as it favors healing, but this vascularity is not of sufficient extent to interfere with the most delicate differential diagnosis, such as cystoscopy. In suitable concentration and doses the anesthetic action of beta-eucaine is equal to that of cocaine. In eye surgery two per cent. is usually sufficient; in the urethra and bladder two ounces of this solution may be used. In the nose and throat a 10-per-cent. solution suffices and in dentistry from two-per-cent. to five-per-cent. One of the peculiar advantages of the beta-eucaine is that the solution keeps indefinitely because it can be repeatedly boiled without affecting it. In the light of these qualifications, it seems to the author that the occurrence of cocaine poisoning in any case where beta-eucaine might have been employed must expose the operator to the severest condemnation.

Immobilization in Pott's Disease.—As a result of long experience, V. P. GIBNEY (Arch. of Ped., Dec., 1902) looks upon appliances which require infrequent adjustment as the most serviceable method of treatment. Immobilization should be prolonged and "uninterrupted," that is, the jacket, if at long intervals removed for cleansing, etc., should be removed without disturbing the parts, the patient being partially suspended in the swing or in a horizontal position. A patient should never be allowed to sit or stand without support. To enlist home cooperation one may say "The back is broken for all practical purposes and it needs a long course of splinting." Great care should be taken to make a properly fitting jacket, and then it should be renewed only once or twice a year. Thus, by not requiring to have the jacket renewed frequently, the patient is free to leave for a more favorable climate, or, in the case of an adult, for his home or business. The author uses the Goldthwait or Tunstall Taylor's kyphotome, aiming to get a little recession of the deformity when the jacket is applied. He uses seamless, stockinette shirting made of Angora wool, and to this is sewn padding of Russian felt to cover the spine, the anterior superior spines and the free ribs. The greatest attention to detail is necessary in fitting a jacket, and if it fails to fit a new one should be applied at once.

Latent Retrocecal Abscess.—The chronicity of certain abdominal suppurative conditions, especially around the cecum, is well illustrated by a case reported by T. S. CULLEN (N. Y. Med. Jour., Dec. 27, 1902), who three years ago operated upon a boy with an acute appendicitis with abscess, since then he has been fairly well, but subsequent to a fall upon that side one year ago, he had severe pain lasting several days. Recently he fell again and has been confined to his bed with local pain, tenderness and moderate temperature. Incision disclosed an encapsulated abscess up behind the cecum filled with foul smelling pus which had evidently been there a long time. The appendix scar was perfect, but it was thought that a small pocket of pus had not been sufficiently drained at the time of the original operation.

Indications for Nephropexy.—Many surgeons have become rather enthusiastic over the results following the operation to anchor the kidney, but there has been considerable difference of opinion in regard to the indications which make this operation imperative or advisable. A. H. GOELET (Med. Rec., Dec. 20, 1902) makes the subject clear from his standpoint by saying that the indication for fixation of the kidney is prolapse to the third degree or beyond; that is, when the whole organ is found prolapsed below the last rib in front. Even when there is apparent absence of symptoms or external evidence that the prolapse is causing disturbance, he still advocates operative interference because, he says, the kidney is in a crippled condition and symptoms will undoubtedly arise later. The three principal indications to be found for fixing the kidneys are: (1) The symptoms of inconvenience it produces, (2) the influence it may exert in producing or maintaining disease of the female pelvic organs, and (3) its influence in causing disease of the kidney itself. The most frequent and most distressing symptoms referable to this condition are those which point to derangements of the digestive apparatus and the genito-urinary organs, with fatigue and general depression following exertion of any kind in the erect position. These symptoms, it is claimed, should be relieved by operation before they become unbearable and lead to chronic invalidism. The interference with the pelvic organs, which is caused by a prolapsed kidney, is supposed to be due to pressure upon the ovarian veins by the misplaced organ, thus leading to various congestive disturbances. The most important indication for nephropexy, however, is the condition of the kidney itself produced by the prolapse. The function of the organ is interfered with, congestion produced and the outflow of urine is frequently retarded or obstructed. It is urged that such a condition, if it persists, must lead to inflammation or degeneration of the organ. The results of careful microscopical examinations of the urine in a large number of cases of prolapsed kidney show that there are evidences of irritation of the pelvis, ureter, and kidney substance in nearly all. The use of binders or corsets specially devised to support the kidney has seemed to prove efficient in the hands of some, but the general opinion is that they are by no means satisfactory. The danger from the operation of nephropexy is so slight that the possibility of a serious outcome may be with confidence almost entirely disregarded.

Extensive Intestinal Resections.—The rather limited literature bearing upon this subject is reviewed by G. Fantino (Rif. Med., Dec. 15, 16 and 17, 1902) and two previously-reported cases, in which he removed three meters of the small intestine, are discussed. In one case the result was perfectly successful, while in the other, death occurred within a month after the operation, from marasmus. The author finds an explanation of the unfortunate outcome in the latter case, in the supposition that the remainder of the intestine could not suddenly adjust itself to the additional work thrown upon it; while in the first case, abnormal conditions within the section of intestine removed, had led to a gradual development of supplementary power in the healthy portion, so that it was prepared to carry on the work alone after resection of the diseased part. A study of the work of other operators seems to indicate that, in selected cases, the removal of from one-third to one-half of the intestine is compatible with life and health, though in resections approaching the latter figure, the danger is much increased. There is some ground for the belief that the result is more apt to be successful when the resection is made in the first or second part of the intestine; though the author reports a case in which, owing to extensive adhesions rendering identification of the various parts of the intestine extremely difficult, he accidentally removed the entire colon together with a meter's length of the small intestine; and the patient survived in comparatively good health for nine months, and, in all probability, would have continued to live, had it not been for the fact that prolapse and strangulation of a good part of the intestine occurred through a fistulous opening in the abdomen, which had fulfilled the function of an artificial anus. In this case, a faulty anastomosis had brought about a circuitous passage of the substances within the bowel; thus necessitating their longer sojourn in the intestine. This accidental anomaly, the author believes, allowed more time for digestion in the remaining small intestine, and he suggests the possibility that future operations for the removal of the colon might be based upon this idea.

Surgical Treatment of Prostatic Hypertrophy.—This topic is fully discussed by R. Menocal (Rev. de Med. y Cirugia de la Habana, Dec. 10, 1902) who describes his experience with the Bottini operation and prostatectomy and comes to the conclusion that the Bottini is the most satisfactory, because of the rapid convalescence; an anesthetic is not always required; no danger of perineal urinary fistula. Besides all the advantages noted, the Bottini does not require such minute post-operative care nor does it expose the patients to secondary infections as does prostatectomy. He believes in cystoscoping before performing a perineal prostatectomy, on account of certain forms of hypertrophy of the median lobe which may be extirpated with ease by a suprapubic cystotomy and obtain the immediate relief of symptoms without resorting to a perineal incision.

Transverse Incision in Laparotomies.—This operation is described by I. Plasencia (Rev. Méd. Cubana, Dec. 1, 1902) who attributes his success with the transverse incision in a series of abdominal cases requiring laparotomy. He sums up the advantages of this procedure by saying that it gives a firmer cicatrix, thus preventing subsequent hernias, and is preferred by the patients on account of the esthetic effect, the pubic hair covering the incision subsequently. He incises both the skin, fascias and aponeuroses of the external oblique muscle a few centimeters below the upper boundary of the mons veneris. The rest of the operation is done by a vertical incision through the muscles, picking up the peritoneum and incising as is customary.

A Case of Cervical Rib.—The history of a case with this abnormality is reported briefly by R. Menocal (Rev. de Med. y. Cirugia de la Habana, Nov. 25, 1902). A man, twenty-five years old, carpenter by occupation, with negative family and personal histories. At fourteen the patient noticed a small tumor in the supraclavicular region on the left side; since then had noticed it had gradually increased in size. About nine months previous to his present trouble had a sudden pain over the left side of the neck, attended with nervous excitement. These phenomena repeated themselves at intervals of one or two days. On examination there was an elevation in the supraclavicular fossa, hard and resistant and of bony consistency, slender, elongated structure traceable to the transverse process of the seventh cervical vertebra. Immediately in front the subclavian artery is felt and its beatings are visible. A thrill is also felt, and on auscultation a marked murmur is heard. All the other organs were normal. There was nothing unusual in the development of the left superior extremity. An operation confirmed the diagnosis made of "cervical rib." Care was taken in excising it, not to injure the vessels or the brachial plexus. The length of the rib was 1¼ inch. Recovery was uneventful, union by first intention, and 17 days after the operation patient was discharged cured. Menocal also reviews the literature on the subject and claims there are but 20 other such cases on record, and all were unilateral.

Treatment of Fractured Patella.—This contribution by Von Mikulicz-Radecki, Professor of Surgery at the University of Breslau, was sent as his share in contributing tokens to Lord Lister (Brit. Med. Jour., Dec.

13, 1902). It is not usually known that Lister was the first, just 25 years ago, to suture the patella. The older operations, as Malgaignes hooks, subcutaneous suture of the patella, as well as various kinds of bandages and appliances were in this way expelled from the armamentarium of surgery, and it became the duty as well as the right of all who were qualified to do so, to treat the fracture by this method. In deciding whether or not a case is suitable for suture, the same principles prevailed as to the technical performance of the operation, the type of the injury and the constitutional condition of the patient being important factors. It is not possible to differentiate with certainty between those fractures which have been made directly or from muscular violence inasmuch as the individual usually falls and is very apt to contuse the knee at the time of injury. However, in a large proportion of the cases, it is possible to reach at least a reasonably sure conclusion and he has with few exceptions abstained from suturing the patella in blow fractures, limiting himself here exclusively to medico-mechanical treatment, the suture being carried out in the combination and tear fractures. No time should be lost to see whether function reestablishes itself if the case be one suitable for operation, and this should not be delayed beyond the end of the first week, for the later one operates the more difficult is the work and the less certain the result. So far as the medico-mechanical treatment goes, its principles are absolute. The immobilization of the joint for a short time with elastic compression massage from second to the fourth day, out of bed the end of the first week with removable plaster-of-Paris splint. After the third week, careful active and passive movements begin and the case is completed with suitable mechanical apparatus. The details of suturing are as follows: The limb is not exsanguinated, the incision, as Lister originally suggested, is in a transverse direction over the fracture and long enough to expose the parapatella ligaments and the torn capsule. For suture he formerly used silver wire, but now much prefers brass wire, which is stronger. The patella is pierced by three or four sutures which should not include the cartilage. Great stress is laid on the fact that the accessory ligaments should be sutured on each side with one or two sutures as well as the patella. The blood clot is removed with a sharp spoon during irrigation with salt solution. The wound is not drained, but a gap of one centimeter at each end is left unsutured. This suffices for the escape of any subsequent oozing. The after-treatment of sutured cases is in the main the same as that described above. Both methods, the operative and the non-operative, give equally good results with the right interpretation of indications and a correct technic. These methods are distinctly supplementary one of the other, are not alternative, each having its own definite, sharply marked off indications.

Hernia of the Bladder.—An interesting paper dealing with the classification, symptomatology and treatment of vesical hernia, by G. BARONI (Rif. Med., Dec. 19 and 20, 1902) who emphasizes the fact that this condition is often overlooked or incorrectly diagnosed, thus making it appear to be of infrequent occurrence, though it cannot be classed among the rare affections. The author states that of the various forms of vesical hernia —crural, obturator, perineal, vaginal and inguinal—the last is the most common; the vaginal cystocele ranking second in point of frequency. This, however, he relegates to the gynecologist, as falling more within his domain, and discusses inguinal hernia of the bladder as being the form most frequently dealt with by the general surgeon. The following review of the objective and functional symptoms is given: If the tumor be a simple cystocele, it will be soft and flaccid if empty, tense and fluctuating if full of urine; the size varying with the horizontal or vertical position of the patient, exertion or coughing. Two characteristic features are that the tumor is always reducible, and pressure upon it provokes a desire to pass the urine. Much information may often be gained by noting the effect, upon the size and consistency of the tumor, of withdrawal of urine or injection of fluid into the bladder; also the passage of the sound, where practicable, into the protruding part of the bladder is a valuable aid to diagnosis. If the tumor be a cysto-enterocele, it will be found to consist of two portions; an internal and posterior part, having the characteristics of the cystocele and giving a dull note on percussion, and an anterior and external part which gives a tympanitic note and a gurgling sound when replaced. Of the functional symptoms, disturbances of micturition are the most prominent; a frequent desire, with scanty emission of urine being present. A characteristic symptom is found in the patient's ability to void, spontaneously or by catheter, a certain amount of urine; a second portion being passed after compression of the tumor, which is then seen to be empty. A symptom common to all the cases, seen by the author, was pain in the region of the kidney upon the side corresponding with the hernia, and radiating downward and forward to the tumor. If palliative treatment, consisting in reduction and support with a bandage, be unsuitable to the case, operation must be resorted to. Resection of the protruding part is considered inadvisable by the author, unless the neck be so constricted as to render it little more than an appendix to the bladder after reduction.

Urine Segregation.—The importance of gaining an accurate idea of the functional and anatomical condition of each kidney before proceeding to a radical operation is evidenced by the attempts made during recent years to devise practical and safe methods for obtaining the urine separately. Two methods have been employed: ureteral catheterization and urine segregation. The former method is in many instances difficult and impracticable. Three urine segregators have been devised thus far, the last that of A. J. DOWNES, first exhibited in 1900. He has lately modified this instrument (Phil. Med. Jour., Jan. 10, 1903) by constructing a new beak which obviates the necessity of rotation within the bladder. The beaks turn each a maximum of 2½ degrees from the lower, antero-posterior line of the bladder, and when separated they closely follow the lower wall of the bladder. The perforations in the beak have no connection with the one egress opening, their function being to allow the passage of urine to the bottom of the prepared sulcus, from which the egress opening collects it by siphonage. He has proved the accuracy of the instrument in patients with only one kidney—the urine coming from the kidney side alone when the segregator was in place.

Operation for the Relief of Gastroptosis.—It is believed that the majority of women have gastroptosis and yet, until recently, but few surgical measures have been employed to offset the numerous failures in the mechanical and medicinal treatment of this distressing malady. H. O. WALKER (Jour. Am. Med. Assoc., Jan. 17, 1903) reports three cases in which gastro-jejunostomy was done for the relief of a chronic invalidism due to this condition. The author's experience in gastroplication and gastrorrhaphy having been unsatisfactory he conceived the idea of making a direct opening from the stomach into the intestine in an attempt to relieve the pyloric kinking. In all cases the McGraw elastic ligature was used, the anastosmosis being made between the anterior wall of the stomach and a point in the intestine about 24 inches from the pyloric orifice. In one case, to obviate the production of a vicious circle, he did an anastomotic enterectomy below the gastro-jejunostomy. The cases all did very well, increasing in weight and presented no further symptoms referable to the gastroptosis. The advantages of the McGraw method being simplicity, ease and rapidity of performance, small liability to sepsis, no danger of a foreign body, possibility of a large opening without liability to cicatricial contraction.

Basedow's Disease Surgically Considered.—In the opinion of T. W. HUNTINGTON (Ann. of Sur., Jan., 1903) the surgical treatment of this disease has the following features: He says that argument as to the legitimacy of surgical therapy in Basedow's disease is unnecessary. The transitory relief attending protracted efforts at medical and electrical treatment is generally atmitted. Kocher insists that all cases of Basedow's disease should be operated. The argument for early operation in malignant disease applies here with equal force. Extirpation, the only rational treatment, should be undertaken before destructive tissue changes have occurred, before the patient's vitality is lowered by chronic thyroid intoxication. For obvious reasons, complete bilateral extirpation should never be undertaken. A small fragment of the least affected lobe contiguous to the tumor can be located and left in situ. Advanced cases, requiring interference with both lobes, should be undertaken in two steps, with an interval of from two to four weeks between operations. The point made by Dr. Joseph A. Blake of New York, that excision is better than enucleation in these cases, undoubtedly has merit, the former procedure is readily accomplished without hemorrhage, by applying double ligatures to vessels as they are exposed and dividing between. The latter procedure is inevitable when a lobe is to be divided, and in a few instances hemorrhage from the parenchyma of the gland will exercise to a high degree the ingenuity of the operator. In reviewing the detailed histories of a certain number of cases resulting fatally within a short time after operation, one cannot escape the conviction that general anesthesia is, in a very large proportion of them, seriously at fault. The facility and thoroughness with which local anesthesia can be accomplished is almost universally recognized. Cocaine, or one of its analogous compounds, has supplanted chloroform and ether, and their great value is manifest in this over all other applications of these drugs. Up to a recent date the exhibition of these agents has been by the ordinary hypodermic or Schleich method. A few months ago, in an interview with Dr. J. Marshall Flint, Professor of Anatomy in the State University, he made the very pertinent suggestion that nerve-trunk cocainization after the plan evolved by Professor Halsted, and successfully employed by Harvey Cushing in herniotomies, was practicable in this undertaking, and advised so dealing with the superficial cervical nerve. So far as the author can learn, the employment of what Cushing terms "regionary anesthesia" in three operations which he reports, is the first application of Halsted's idea to this undertaking. Although it was supplemented by a small amount of Schleich's solution, there was no doubt that the method could be relied upon independently in the average case. To expose the nerve, the incision should be made along the posterior border of the sterno-cleido-mastoid about the level of the thyroid cartilage. This may be done under cocaine anesthesia. The area of anesthesia, according to the anatomical distribution obtained will be triangular, with its apex at this point and its base at the median line. Direct experiment on the cocainization of nerves has shown that the boundaries obtained in this way often vary considerably from those given in text-book descriptions. The reason is obvious, for many of the finer branches, which convey sensation, are often too delicate to dissect. Moreover, it is now well known that the areas supplied by adjacent cutaneous nerves often overlap. The cocainization of the nerve trunk after exposure can be readily effected by the introduction within the nerve-sheaths of two, or at the outside, three, minims of a two-per-cent. solution of cocaine, through a very delicate hypodermic needle. The duration of anesthesia is manifest for a period of fully one hour.

Some Points in Ligation of Arteries.—This is a very broad field, and opens up a great number of possible operations. R. H. M. DAWBARN (Ann. of Sur., Jan., 1903) discusses a number of the more important ligations, of which the following may be taken as an example, namely, ligation of the superficial femoral at the so-called point of election, ordinarily given as 4½ inches down a line running from the middle of Poupart's ligament to the adductor tubercle upon the inner condyle of the femur. This rule obviously has disadvantages—three measurements must be taken in order to operate by it. That which the author suggests, instead, is the following: In a full-sized man the point of election will be found seven inches down a line, taking the shortest possible course from the anterior superior iliac spine to the middle of the popliteal space. Reasons: (*a*) This rule involves but one measurement; (*b*) the tape-line lies upon the skin its entire distance; (*c*) it requires measuring only the hypothenuse of the triangle described by Scarpa, instead of finding half of its base line and then bisecting the triangle, which is the customary way. It is a scalene triangle, and the hypothenuse is a very long one, which is why the seven-inch mark happens to be exactly the same as a 4½ inch one by the usual rule. He believes the common femoral has never been found bifurcating lower than four inches down the accustomed line; hence the reason for adopting heretofore a 4½-inch point of election. Ligation of the superficial femoral in Hunter's canal, *i.e.*, at any point in the middle third of the thigh, there being no femoral artery in its lower third. This is the ligation called by more than one of the text-books the "difficult ligation" to distinguish it from the one just mentioned at or about the apex of Scarpa's triangle. The rule which he strongly recommends here permits the artery to be found as easily as the pulse at the wrist; and it is the only way to make it so easy, namely, sharply to abduct the thigh and flex the leg, bringing the heel up against the perineum, or as nearly so as possible. An assistant also presses the knee downward toward the table. The limb is thus brought vigorously into the sartorial or tailor's position. In this position the adductor longus, one of the three sides of Hunter's canal, comes boldly up into relief as a firm, tense ridge. If now, the incision be made lengthwise upon this ridge, and deepened along its upper surface, it will be wholly impossible to miss the artery. The first muscle exposed in this incision will be the sartorius. It should be displaced outward (upward). It is recognized readily as being the only muscle upon the antero-internal surface of the thigh, the fibers of which run downward and inward, all others here running downward and slightly outward; and again, the sartorius will be completely relaxed and flabby in this position, while the adductor just beneath will be tensely rigid. The roof of the canal, the fascia lata, is here transverse in the direction of its fibers. It is translucent, and through it we can clearly see the artery almost as readily as if through glass. Although in the accustomed position for ligation, the vein lies, in Hunter's canal, to the outer side of the artery, in *this* position, now recommended, the vein lies beneath the artery, very much as it is found in the ligation near the apex of Scarpa's triangle.

The Surgical Importance of Influenza.—In a very long article of this title I. Perez (Deut. Zeitsch. f. Chir., Nov., 1902) draws his conclusions from a review of no less than 520 papers, as well as from his own voluminous experiments on the subject. The more important are as follows: Influenza is a remarkable protean disorder which possesses the highest toxic character and whose specific cause is the bacillus Pfeiffer. This bacillus lodges, and causes the characteristic pathological changes so well known, but often so variable, in almost all the organs, but more particularly in those which, because of the nature of their protoplasm, are most liable to inflammatory processes. The influenza toxins take hold particularly on the central and peripheral nervous system where they cause either a simple catarrhal process or even purulent, never, however, producing a fibrinous change. The polymorphism of this sickness depends on the location of the infection as well as upon the extent of involvement. Pfeiffer's bacillus enters through the usual paths, viz.: the mucous membrane, the skin, the vascular system, and so on. The course of the sickness depends on the strength of the organism more than upon the path of entry. If the bacilli are introduced in small numbers, they are apt to remain locally. If, however, in great quantities, or if the organism is extremely prostrated at the time of infection, then certain more or less pronounced changes take place which in the early stages present the appearance of a profound toxemia, as a result of which the individual may perish in a short time—from one to three days. On the other hand, however, in the case of a localized inflammation which sometimes appears with great suddenness in several organs at once there may be present toxic evidences of a subacute nature. In these cases the patient lasts a longer time, from 20 to 60 days, dying finally from marasmus. The influenza bacillus remains for only a short time in the blood stream, being swept by this current into the various organs. It is only on rare occasions that its presence in the blood can be demonstrated. The skin is the most marked region where one expects to find the peculiar changes characteristic of the infection of Pfeiffer's bacillus. They are very varied. In the derma, abscess formation is common. In the mouth, the pharynx, the larynx, the trachea and bronchial system the bacillus usually produces a catarrhal inflammation. In the nasal mucous membrane this may be either simple or purulent and may even progress so far as to form abscesses and hemorrhages. It is in the middle ear, however, that the influenza germ finds its real home. Here it develops and frequently produces empyema of the antrum with the direful sequelæ of meningeal involvement. In the osseous system the bacillus may produce a hypotrophic periostitis as well as suppurative ostitis. In the joints infection of this type usually produces simple serous inflammation, but elsewhere it may become purulent. Even the muscles are not exempt from its inroads and a suppurative myostitis is often met with in the course of influenza infections. In the peripheral nervous system the infection produces degenerative inflammatory changes which may give rise to single or multiple neuralgias or pareses. In the alimentary canal one may frequently find gastroenteritis, which occasionally proceeds to suppuration, not infrequently producing periappendicular abscesses which too often go on to death from suppurative peritonitis. In the liver a perihepatitis and hyperemia as well as interstitial hepatitis with necrosis of the liver cells and possible abscess formation are to be looked for. In the female generative organs the bacillus of Pfeiffer gives a hemorrhagic endometritis, a salpingitis, a catarrhal vaginitis which may sometimes be purulent. In the ovary alone it appears never to produce any change. In the early months of pregnancy, however, it is prone to produce abortion. An excellent example of symbiosis exists between the staphylococci and Pfeiffer's bacilli, in which the human body is the loser. Any region which has been previously invaded by the first-named germ seems peculiarly suited to harbor the second, and this would appear to be one of the most frequent aids for the entry of the influenza germ. In establishing a diagnosis of influenza infection, the microscopic investigation of the discharge is of the highest worth, and it is characteristic that the bacillus is found almost always within the cells. The serum taken from animals infected with influenza produces a moderate agglutination reaction but this is not sufficiently constant to be of marked diagnostic value. One important differential diagnosis to be made is whether a given case is pure influenza infection or contaminated with the pneumococcus, this combination being frequent and virulent. There is no such thing as passive immunity for influenza, only a moderate and rapidly vanishing active immunity seeming to be produced. It will be seen that many of these conditions, which should now be recognized as due to Pfeiffer's bacillus, are too often classified under the old and unscientific name "rheumatism."

Roux's Operation for the Radical Cure of Femoral Hernia.—Although an infinite number of technics have been described and successfully employed in the treatment of this form of hernia, it is well known that none have been absolutely satisfactory. It has always been difficult to effectually block the femoral canal. J. Crawford Renton (Brit. Med. Jour., Dec. 27, 1902) describes the operation which he had seen Roux perform in Lausanne. He himself had used it in ten cases while Roux has employed the technic on over 60 cases without recurrence. The technic is as follows: (1) a simple incision over the crural canal; (2) isolation of the sac, reduction of its contents, ligation of its neck and amputation; (3) a metal staple is passed obliquely through Poupart's ligament over the crural canal, taking care to avoid the femoral veins and artery and of course the nerve, and is then gently hammered into the pubic bone; (4) simple closure of the skin incision. The only important points in connection with this simple and satisfactory procedure are first that the staple must not be driven in too tightly, otherwise it might injure Poupart's ligament. On the other hand it must have a sufficient grip not to be loosened by the ordinary blows which might come to the part. It remains permanently in situ. In those cases in which it has been used it has caused no irritation either of the soft parts or the hard parts and seems to offer a very valuable technic for the curing of this frequent form of hernia.

Subdural Interposition of Rubber Tissue without Removal of the Gasserian Ganglion in Operations for Tic-douloureux.—The hemorrhage and the dangers from hemorrhage and shock led R. Abbe (Ann. of Surg., Jan., 1903) to reason that mere division of the affected trunk of the nerve within the skull, coupled with the interposition of a bit of rubber tissue between the divided ends would not only obviate the major operation of removing the ganglia, but also effectually prevent the reunion of the cut nerve. The operation which he advocates in grave cases of this disease is that the surgeon should not temporize by any of the external methods of operating, but at once resort to this, which now seems to him the proved and radical cure in its safest form. The external carotid artery may be ligated with advantage in controlling hemorrhage. A vertical incision over the middle of the zygoma carried through the temporal muscle to the bone divides no important nerve or vessels. The muscle is scraped to either side and held by retractors. A small opening is quickly made by mallet and gouge, and this is rapidly and safely enlarged to an inch and a half diameter. No better exposure can be had by any incision than this simple straight one. The dura is then pressed away from the middle fossa until the nerves are exposed. The much complained hemorrhage from venous sinuses on dissecting up the periosteum can be best controlled, and very quickly, by pressing a strip of rubber tissue upon the place with a firm pad of gauze in strips. The clotting of blood under the rubber tissue takes place very quickly, while if plain gauze is put in contact with the bleeding point, the blood being sucked up into it, prevents clotting. The nerve trunks he grasps in separate artery clamps, divides each close to the foramen of exit, and, either by cutting or by rotation of the forceps, separates them from the Gasserian ganglion. The wound is packed for a few minutes with narrow strips of iodoform gauze until dry. A piece of thin gutta-percha tissue, stiff enough to be easily handled, is sterilized by rubbing with bichloride solution, and kept in salt solution for a few moments before operating. This is cut 1½ inches long and three-fourths of an inch wide. This is laid carefully over both the foramen rotundum and ovale, where the nerves have been separated and pressed carefully into place by iodoform gauze. In a very few moments the gauze may be drawn away, and the Gasserion ganglion allowed to settle down upon the rubber tissue. A small drainage-tube should be placed in the angle of the wound to insure a perfectly dry healing. It certainly is beyond dispute that there is no need for the removal of the first branch of the fifth pair in any case of grave tic-douloureux unless the origin is to be found in a tumor of the Gasserian ganglion or behind it. In conclusion, he says that he thinks he has demonstrated (1) that the operations upon the ganglion have been carried to an unnecessary degree of severity; (2) that resection of one-fourth or one-half inch of the nerves anterior to the ganglion and within the cranium, with the interposition of rubber tissue, can be relied upon for perfect cure, up to six years at least, with probability of permanency as great as by any method; (3) that it is a simple, speedy, and safe method, and thereby fulfils the highest aims of the best surgery.

Tuberculous Peritonitis.—In a most interesting paper on this subject, in discussing the theories of the etiology, symptomatology, diagnosis and treatment, Prof. VEIT, of Leyden (Gaz. de Gyn., Jan. 1, 1903), comes to the following conclusions: (1) Tuberculous peritonitis is always a secondary lesion, and is either of the ascitic or adhesive variety; (2) tuberculosis of the genital organs may be primary, and consist of lesions of the reflected portions of the peritoneum covering the genital organs alone; (3) peritonitis with extensive nodule formation, which one could not attribute to certain tumors of the ovary or to carcinomatous origin should, in general, be ascribed to a tuberculous origin; (4) tuberculous peritonitis may undergo spontaneous cure, but such instances are rare; (5) tuberculous peritonitis is cured by laparotomy, though it may not always be successful, the cause is the presence of tuberculosis in the other organs; (6) there is still no unanimity of opinion as to the rationale of these cures. Possibly it is due to the normal serum or the formation of an antitoxin; (7) in recent cases, one should operate if the peritonitis gives distress. The repetition of the operation may become necessary if one has to operate very quickly; (8) certain chronic cases ought to be looked after immediately. If spontaneous cure is delayed, it is necessary to interefere; (9) the operation consists of a simple laparotomy in the white line, the evacuation of the contained fluid, and the suture of the operation wound; the operation should not be considered as radical, if it is found that the tuberculous lesions are confined to the genital organs.

Parotitis Following Celiotomy.—Inflammation and swelling of the parotid gland, as a post-operative complication of celiotomy and pelvic surgery, are very rare. The relation of the parotid gland to the viscera of the abdomen and the pelvis is an unexplained problem even to-day. W. H. MORLEY (Am. Gyn., Dec., 1902) has tabulated 51 cases and has come to the following conclusions: (1) there is an intimate relation betweeen the parotid gland and the abdominal and pelvic viscera; (2) this close relation probably exists through the medium of the sympathetic nervous system; (3) suppuration and non-suppuration of the parotid gland in these cases depends entirely upon the local condition in the gland; (4) this complication may follow any operation upon the viscera of the abdomen and pelvis but it occurs more often after an ovariotomy; (5) the patient's life is not jeopardized per se by the occurrence of this complication; (6) the appearance of the parotid bubo usually marks the turning point of the disease.

PEDIATRICS.

Sudden Death in Children.—That sudden death in the case of a child said to have been perfectly healthy is not always to be ascribed to the ignorance and negligence of the parent, is shown by the fact that it sometimes occurs in the families of physicians. P. KRAUTWIG (Arch. f. Kinderheil., Bd. 35, Hft. 3 and 4) cites the case of Langerhans whose twenty-two-months-old child received an immunizing injection of diphtheria antitoxin and five minutes later displayed rapidly increasing agitation, had an attack of coughing, became pale and fell to the ground; it then had another coughing spell, became blue, the pupils dilated, the child swallowed several times, foamed at the mouth and then died. The father at first attributed the child's death to the antitoxin but later admitted that the status lymphaticus was the cause. The author believes, however, that the stupidity, indifference and superstition of parents are responsible for a great many cases of sudden death in children. A severe coryza in infants may be present for many days and pass unnoticed; likewise an extensive bronchitis may not be detected, the child having the strength neither to cough nor to cry. Intestinal disturbances and a slowly progressing cerebral disease are often disregarded. All causes of sudden death may be grouped under two general classes, syncope and asphyxia. Of the former there are numerous causes leading to cessation of the heart action: wasting of the heart muscle, fatty degeneration, wounds, anemia following occlusion of the coronary arteries; impediments to the heart's action by fluid in the pericardium or pleura, obstructions in the circulation, as in paralysis of the splanchnics and thrombosis of the portal vein. All these causes find few exceptions in children. Arteriosclerosis as a cause of sudden death is not seen in childhood. After the recovery from diphtheria, cases occur as the result of myocardial changes. Other causes are severe choleraic intestinal disturbances, producing anemia of the heart by paralysis of the splanchnics with consequent plethora of the abdominal organs, which together with ischemia may cause sudden death. Cases occur in rachitic children in whom the distended stomach and intestines may push up the diaphragm, and narrowing the chest cavity already compromised as the result of the rachitic process, may cause mechanical arrest of the heart. The toxins produced in intestinal disturbances, in infectious diseases, particularly diphtheria, and rachitis, may cause cardiac arrest by stimulation of the acceleration and inhibitory nerves of the heart, of the cardiac ganglia and the vasomotor and vasodilator nerves. Cases of sudden death during rapid healing of extensive eczemas in nurslings, have been ascribed to some action on the innervation mechanism of the heart; acute nephritis has been found in such cases at autopsy. The other groups of causes leading to sudden death by asphyxia include the following: Direct restriction of the activity of the respiratory organs by pneumonia, bronchitis, atelectasis, etc.; occlusion of the rima glottidis by inflammation, edema, paralysis or spasm of the laryngeal muscles, compression by tumors, especially by an enlarged thymus gland; spasm of the diaphragm in tetanus and eclampsia; anemia of the medulla oblongata in heart-failure and hemorrhages; the inhalation of poisonous gases. Diffuse bronchitis and lobular pneumonia are sometimes not noticed by parents or nurses, and even physicians may be unaware of the gravity of a case. The author frequently experienced cases of children whom he left a short time before laughing and playing and who died suddenly with only a diffuse bronchitis discoverable at autopsy. He is of the conviction that many supposed cases of death from overlying (accidental suffocation of the infant by the mother during sleep) are really caused by an unobserved disease of the lungs. Tuberculous meningitis is frequently overlooked: the physician is first called when convulsions have set in and the disease is in full bloom. Asphyxia may result from the inhalation of foreign bodies, including flies and roundworms; the possibility of postmortem migration of the latter is to be thought of. The aspiration of vomited material frequently occurs in childhood. Spasmus glottidis and compression by an enlarged thymus are the most frequent causes that operate through asphyxia. The author is of the opinion that laryngospasm is in most cases one of the manifestations of tetany. Both forms of nervous disturbance are rooted in the same soil as rickets. Spasm of the larynx is found most frequently in artificially fed infants of the poorer classes living in small damp rooms. The enlarged thymus is one of the manifestations of rachitis. Likewise the status lymphaticus of Paltauf and Esherich, although not directly specific of rickets, yet develops under the same conditions; the swelling of the lymphatic chain about the neck is analogous to that of the thymus gland. The author believes that most of the so-called cases of thymus-death are due to the effects of rickets; the metabolic products of the latter act upon the cardiac nerves and ganglia. The reason assigned for this opinion is the fact that frequently these cases appear suddenly without antecedent dyspnea, without the crowing or whistling sound, and without accompanying convulsions. The cases ascribed by Henoch to swallowing of the tip of the tongue are not now considered to be as frequent as formerly.

Epidemic Edema in Infants.—At the Lying-in Hospital, Providence, during an epidemic of gastroenteritis among the babies, thirteen cases of edema made their appearance in eleven days. The patients all had gastro-enteric trouble either immediately preceding or at the onset of the edema. Their age varied from six days to two years. Four of the cases left against advice, and the remaining nine all died after being several hours in collapse. There were no convulsions or coma. There were six post-mortems, three of which showed bronchopneumonia, one day, one month and two months respectively after the edema had disappeared. The cause of death in the others was not clear. The symptoms were as follows: Face pale, pasty-looking, apathetic, depressed, temperature subnormal, skin dry, soft, deeply pitting on pressure. In a number of the cases the edema was intense, and would rapidly change from the face to the legs or other parts of the body and vice versa. The weight increased before or with the appearance of the edema and decreased when the edema subsided. The urine in nine cases contained albumin but the casts were very few or none. One case which died while the edema was present showed normal kidneys at autopsy, so the kidney trouble was evidently not primary. The children were in three different wards on different floors, attended by different nurses, yet the trouble broke out simultaneously. All the patients were artificially fed, and this suggests that the milk may have caused the gastro-enteric trouble, and that some toxic products from this may have caused the edema. In discussing the causes of edema in infants, the author considers this epidemic to be most closely allied with the edemas occuring in depleted and anemic infants.

Peliosis Rheumatica in Children.—Though this disease is believed by Baginsky to be non-rheumatic, HENRY HEIMAN (Arch. of Ped., Dec., 1902) finds clinical features which indicate a correlation with rheumatism. The onset of peliosis is usually with sore throat, mild febrile disturbance and pains in the joints. The joints of the upper limbs are more often involved in children than in adults. The joints are painful, tender, very little swollen and not reddened; the pain diminishes as the rash appears. Tender nodules sometimes occur beneath the skin. In children the constitutional symptoms are milder than in adults, the rash more extensive, more joints are involved, the duration is longer, recurrences are more common and tender subcutaneous nodes are more frequently seen. Unger says that in children there often occurs edema about the lumbar region of the spine. Fuchs holds that there is always desquamation after peliosis and not after purpura. Monti says that the disease never occurs in nursing babies. The author describes the case of a boy of eight years with purpuric spots in the mouth, marked tenderness of the abdomen, and the development of an apical systolic cardiac murmur not transmitted to the axilla. The murmur was not audible a week later, and the cure was complete three months after the onset of the disease.

Intravenous Administration of Anti-Diphtheritic Serum.—The treatment of diphtheria by the injection of serum has passed its experimental stage. The method has usually been a subcutaneous injection. Intravenous injection of the serum is comparatively new and the points in its favor are argued in the following terms by D. R. CAIRNS (Lancet, Dec. 20, 1902). The marked reduction in the case-mortality in diphtheria effected the introduction of the diphtheritic antitoxin is admitted by everyone, but, great as this reduction has been, the experience gained in the treatment of this disease in the city of Glasgow Fever Hospital, Belvidere, suggests that even a further fall in the case mortality may be hoped for. The lines along which this improvement may be effected are twofold: (1) by the exhibition of larger doses than those commonly recommended and (2) in certain cases by the intravenous use of the remedy. The employment of larger doses of serum has been already advocated by several observers, but, so far as the author is aware, no one has recommended the intravenous use of the remedy. In a paper dealing with the serum-treatment of bubonic plague he has advocated the intravenous use of Yersin's serum as a most useful adjunct to the subcutaneous injection of the remedy, and the encouraging results obtained in apparently hopeless cases of this disease suggested the employment of the same method of administration in the treatment of severe cases of diphtheria. Both diseases are due to the reception at a particular part of the body of a specific micro-organism which must be considered as the essential cause of the lesion, while the general symptoms of the disease are brought about by the absorption into the system of a definite chemical poison which is formed by the life-processes of the organism at the seat of inoculation. In plague the subcutaneous injection of Yersin's serum is followed not only by a marked antitoxic effect, as evidenced by improvement in symptoms, but when introduced into the lymphatic drain toward the bubo a directly bactericidal effect can be demonstrated, the organisms contained in the bubo showing evidences of degeneration very soon after the administration of the serum. When given subcutaneously, however, even in large doses, the effect of the serum appears to be chiefly a local one, degeneration appearing only in those organisms which lie within the area of injection. By the intravenous method, the maximum influence of the serum on the tissues and also on the organisms is obtained with greater rapidity than when the serum is used subcutaneously, and those bacilli which have overflowed from the primary focus of infection into the circulation can be reached directly and similar degenerative changes be produced, while at the same time the circulating toxin is most effectively dealt with. The fact that the administration of even large doses of serum subcutaneously is not followed by a commensurate improvement suggests that the serum, in its passage through the lymphatic vessels and glands undergoes a qualitative change whereby its power of neutralizing toxin is considerably diminished. This may be due to (1) a selective action exercised by the lymphatic glands in filtering out the active constituent of the serum, or (2) to the fact that, as Ehrlich has shown, there are a definite chemical action and reaction between toxin and antitoxin, neutralization going on more quickly and more effectively in concentrated solutions than in diluted ones. In the case of plague the local action of the subcutaneous injection of serum is probably directed in the first place to the neutralization of the toxin locally present in the bubo and its vicinity and also to inducing bacillary degeneration in the comparatively large number of organisms present in the primary lesion. Any surplus of antitoxic bodies which reaches the general circulation after passing through the lymphatic channels will probably be present in the blood in such a state of dilution as to be comparatively ineffective, especially in septicemic cases of plague. By immediate introduction of the serum into the general circulation, however, those bacilli which have found their way to the deeper organs may be destroyed and the circulating toxin neutralized by the comparatively concentrated solution of antitoxin.

Pasteurized and Sterilized Milk as a Cause of Rickets and Scurvy.—Although several good authorities have observed cases in which the use of milk modified by heat has seemed to cause distinct symptoms of rickets or scurvy, no very extended experiments have previously been made to determine how efficient and serious this food was in causing constitutional changes. E. M. Sill (Med. Rec., Dec. 27, 1902) has made observations upon 179 consecutive cases which have been fed during a period of from three to eighteen months, pasteurized milk being given for nine months of the year, while during the three summer months sterilized milk was used. The milk has been given out by competent nurses. Careful examinations of the children so fed have shown that 97 per cent. of the cases presented unmistakable signs of rickets or scurvy, most of the cases being rickets or a combination of rickets and scurvy. About 40 of the children had from five to seven daily feedings of the sterilized milk, supplemented by breast feedings. These all showed signs and symptoms of rickets, although not so marked as in those who were fed upon this modified milk exclusively. The changes most frequently seen were beading of the ribs, pot-belly, sweating, flabby muscles, craniotabes and restlessness at night. These results would seem to add valuable evidence in support of the claim which has been urged so generally by competent authorities that the best substitute for mother's milk is fresh, pure, raw cow's milk.

GENITO-URINARY AND SKIN DISEASES.

Adrenalin in Urethral Work.—The following indications for the employment of this drug in urethral affections are presented by S. L. Gans (Phil. Med. Jour., Dec. 13, 1902): (1) In cases of mucous or muco-purulent discharge; (2) urine showing mucous or flat, scaly shreds and mucous shreds; (3) when endoscopical examination shows granular patches or superficial scleroses; (4) when pus cells, epithelium, mucous gonococci or other micro-organisms are present. He submits a number of urethritis, all of a very obstinate character in their resistance to other drugs, which were with few exceptions benefited by instillations of adrenalin chloride, 1 to 1,000. Summing up its value, the author finds that the field of usefulness of this drug in urethral work is limited to the same indications as for mucous membranes in other locailties. It is painless to apply, and causes a cessation of secretion by contraction of the blood-vessels for a varying time. It will only act, however, on superficial lesions, and will bear watching for untoward action.

Catheterism of the Ureters.—The purposes of urethral catheterism in connection with the cystoscope are twofold—for diagnosis and treatment, according to B. Lewis (Ann. of Surg., Jan., 1903)). Under each of these heads he points out the following important points: Diagnosis.—(*a*) To locate the origin of pus, blood, tuberculous products or bacilli, the various pyogenic infections, abnormally desquamated epithelium, etc., as to whether they come from (1) the bladder, (2) the right ureter, (3) the left ureter, (4) the right kidney, (5) the left kidney, (6) the right, or (7) the left perirenal space, and communicating with the corresponding kidney or ureter. (*b*) To recognize and locate obstructive conditions in the right or left ureter from (1) stricture, (2) stone, (3) adjacent tumors, (4) bend or kink in the ureter from movable or dislocated kidney, (5) valvular junction of ureter and its pelvis. (*c*) To determine (1) the presence of two kidneys, (2) if only one, which is absent. (*d*) To determine the number of ureters present. (*e*) To determine the functional activity of each kidney with respect to its excretion of urea, albumin, quantity of urine, the specific gravity, etc. (*f*) To determine the size and capacity of each kidney with respect to (1) hydronephrosis, (2) pyonephrosis, (3) total obliteration of kidney-secreting tissue. (*g*) If there be kidney disease present, to determine (1) if only one kidney is affected, or both, (2) if only one, which is the affected one; (3) if both, which is the one most affected; (4) if removal of the worst one be advisable, is the other one able to carry on kidney function sufficiently? (5) if removal of one be advisable, and the other is capable of supporting life, will the operation remove infection from the body, removing the possibility of dissemination or recontamination? Treatment.—(*a*) To enlarge narrowings or stricture at (1) the ureter openings or (2) in the channel of the ureters. By facilitating drainage through the increased ureter-caliber, thus obtained, to assist in the improvement of pyelitis, or pyonephritis, unilateral or bilateral. (*b*) To irrigate and medicate (1) the ureters; (2) the kidney pelves of one or both sides. (*c*) To assist, by anesthetizing and enlarging the ureter opening, the passage through it of a calculus or a plug of pus, blood, etc. (*d*) To use the ureter, after it is catheterized, as a guide in certain abdominal and pelvic operations. (*e*) By prolonged catheterization of a ureter to assist in the cure of ureteral fistula.

Genito-urinary Therapeutics.—So frequently does one hear of some new non-irritating antiseptic drug which is able to quickly destroy all gonococci without untoward results that one might think that the cure of an acute urethritis of specific origin was a very trifling matter. Experience tells, however, that the progress along these lines has been very slow and that the most successful physician is still the one who appreciates that nature herself is the great and chief factor in the elimination of the gonococcus, the germs being cast off in the pus cells and in the desquamated epithelia. Consequently, an expectant treatment which may do nothing more than leave nature alone is much better in its results than a spectacular one which thwarts her. E. Fuller (N. Y. Med. Jour., Dec. 13, 1902) believes that too much dependence is placed upon these local remedies. It should be borne in mind that the normal tract is sterile, and if normal functional conditions exist, a spontaneous elimination of a general infective principle promptly occurs. Therefore, if one finds a lasting infection grafted on the genito-urinary tract or any portion of it, the chances are that some other cause exists, and it should be made out as soon as possible. Defective urinary drainage, traumatism, special infections and communicating infections may be mentioned as frequent accounting causes and these often require surgical interference. So far as palliative means are concerned, and sometimes they are in themselves sufficient, diuresis and the administration of drugs to inhibit germ proliferation in the urinary tract are by far the most important. Drinking large quantities of soft water instead of using drugs, furnishes perhaps the best means of increasing the flow of urine. High saline enemata are also efficacious in emergencies. Of all the drugs used to meet the second indication urotropin is perhaps the only one upon which much reliance can be placed. Sterilization of the urinary tract previous to operation is considered by some of a great deal of importance and carelessness in genito-urinary surgery is to be deprecated, but the prolongation of operations by long-continued irrigations of the bladder and urethra seem unnecessary and harmful. Subsequent free drainage is of far greater importance. The use of anodynes following such operations is held to be detrimental to the patient's welfare, except on rare occasions, and should seldom be used. They usually mean that something is wrong, and they tend to obscure otherwise valuable danger signals.

Tuberculous Cystitis.—The treatment of tuberculosis of the bladder by washing with salt water, and the application of oil containing iodoform and guaiacol, is a method suggested by A. Montford (La Sem. Méd., Dec. 10, 1902). The good effects which artificial serum produces in tuberculosis of the peritoneum, as well as the generalized and stimulating action which it exercises upon the nutrition of the tissues, were the means of suggesting this method of treatment of the bladder to him. Instead of washing out the bladder with boric acid water, he used the physiological solution of chloride of sodium. He left in the bladder each time a considerable quantity of it, directing the patient to hold it as long as possible. In order to carry out a kind of application, so to speak, and to produce a tolerance in the otherwise irritable bladder, he injects olive oil containing five per cent. of guaiacol and from one to two per cent. of iodoform. He thinks that the iodoform deposits itself upon the mucous membrane, especially at the points of ulceration, and thus forms a kind of protective film. He alternates these applications with the irrigations with normal salt solution, and notes that the pain, bleeding and other well-known symptoms of this disease disappear in a very short time, or, in intense cases, ameliorate.

Treatment of Pruritus with Acids Internally.—The problem of treating a man, twenty-five years old, who was the victim of a generalized intense pruritus, was presented to H. Leo (La Sem. Méd., Dec. 17, 1902). Upon examination he found nothing abnormal in the individual except an alkalinuria, due to the exaggerated elimination of phosphates. He therefore believes that probably the pruritus was due to an overalkaline condition of the blood, and proceeded to give the following treatment: He prescribed hydrochloric acid, 10 drops at a time, every two hours. The acid was 50-per-cent. strength. Under the influence of this treatment the intensity of the itching decreased and the urine at once became clear. At the end of a few days the acid was changed to a solution of sulphuric acid, 1½-per-cent. strength, a teaspoonful at a dose, every two hours, and later increased to 2½ per cent. Under its influence the itching disappeared altogether. Since then Leo has had occasion to try the same treatment in other cases of generalized pruritus, and also upon a woman who had pruritus of the labia. In all three of these individuals, before the treatment the urine contained alkaline reaction. He carried his experiments further by using the other mineral acids, notably phosphoric and sulphuric, in cases where the reaction of the urine was normal. Although he had with this treatment less success, he obtained one or two good results in generalized pruritus and in pruritus of the vulva. It therefore appears that this form of treatment deserves note, both from the standpoint of its simplicity and also of its evident sound therapeusis.

OBSTETRICS AND GYNECOLOGY.

Application of Cold in Gynecology.—Normal conservatism in operations about the female genitals is perhaps the rule to-day, and one of the best means of combating inflammation is rest in bed, combined with cold applied locally. In order to make the application of cold more successful and exact, Dr. Stroynowski (C'blatt. f. Gyn., Dec. 13, 1902) has devised the following apparatus. It is analogous to Kemp's rectal tube, with the exception that it consists of two soft rubber tubes, one inlet and the other outlet, connected with corresponding lead tubes which enter a moderately dilated bulb, also of lead. This bulb sets against the cervix uteri or in one of the fornices of the vagina. A rubber tube over the system of lead pipes protects the sensitive outer organs from the cold. The water is run in through the inlet and passes out through the outlet tube into a receptacle under the bed.

Cardiopathies and Pregnancy.—An analysis of six cases of pregnancy occurring in patients with heart disease is presented by G. Morelli (Gazz. Osped., Dec. 14, 1902). Of the number, there was one death occurring two months after parturition, one abortion, two premature births and two which went to full term and passed safely through the puerperium. All suffered serious disturbances and the condition of all, with one exception, was aggravated during the puerperal period. From all of which the author concludes that cardiopathies unfavorably influence the course of pregnancy and frequently lead to its spontaneous interruption; which latter may be looked upon as the maternal organism's natural measure of defense. Pregnancy, parturition and the puerperium, in many instances aggravate cardiac disease and bring about a disturbance of compensation which may prove fatal. No one line of treatment can be applied in all cases; hygienic, medical or obstetric treatment being required in individual cases.

Alexander's Operation.—In a discusson upon the indications for this operation and the results which may be expected. L. BROUN (N. Y. Med. Jour., Dec. 20, 1903) reports the results obtained at the Woman's Hospital during the past ten years. Normally the utero-sacral ligaments by their attachments draw the lower segment of the uterus in a backward direction while the body assumes a forward position, having the intra-abdominal pressure directed against its posterior surface. The broad and round ligaments act principally as guys preventing too great a movement backwards. If the round ligaments are shortened and a retroverted uterus made to resume its normal position the intra-abdominal pressure and the utero-sacral ligaments are given an opportunity to exert their influence. The broad ligaments also regain the tone which they had lost by the malposition of the uterus. In order that this operation should be successful it is necessary, however, that the uterus be free from adhesions. If the uterus is bound down it is essential that it should be freed before proceeding with any further operation and as a laparotomy is usually indicated, this may perhaps be better supplemented with Dr. Bissell's operation which consists of taking out a section of both broad and round ligaments. One great advantage of the Alexander operation is its comparative freedom from danger. Only two cases died in a series of three hundred and in neither of these cases could death be attributed to the operation. The shortened ligament increases in size and length with advancing pregnancies and involutes with the uterus subsequently. If the operation is performed by an experienced person, so that there is no unnecessary tearing of the tissues, herniæ should never follow. In regard to the technic it is urged that both pillars and the external ring should be exposed to view before any effort is made to pick up the ligament. The nerve should always be isolated to prevent the possibility of its being caught in the subsequent scar. After withdrawing the ligament about four inches it is anchored in the wound by two black silk sutures each including both pillars of the ring, the ligament and the bottom of the canal. No other operation is believed by the author to give such uniformly good results in suitable cases.

Ureterovesical Anastomosis.—Of the many expedients resorted to for the restoration to function of an injured ureter, G. L. HUNNER (Am. Gyn., Dec., 1902) affirms that ureterovesical anastomosis is now recognized as the one to be preferred in the greatest number of cases. The conditions in which this operation is applicable may be classed under three heads: (1) In the immediate repair of surgical injuries to the ureter; (2) in operating for malignant disease where it is deemed advisable to cut through the ureter implanted in the growth; (3) in ureteral stricture from any cause, if the obstruction be near the bladder; in post-partum and post-operative uterovaginal and uretero-uterine fistulæ, and in case of an abnormal congenital ureteral opening. The difficulty in performing the operation lies in the finding a method of suture that will give secure union when under considerable strain. The author has devised an operation that is thought to fulfil this requirement. It has been performed on two cases. Besides the instruments necessary to perform an ordinary abdominal operation, the following is a list of the special instruments needed. Two pairs of mosquito forceps, two small round needles, fine black silk, catgut and a retention suture. The Operation:—The ureter is severed at the desired point and the hemorrhage at the stump controlled. The renal end of the ureter which is to be put into the bladder, is slit along its anterior and posterior walls for one centimeter, thus making two flaps. The fundus of the bladder is incised for about three to four centimeters, which constitutes the "working incision," and should be large enough to admit the tip of the index finger. Now, after having chosen the point where the ureter will enter the bladder, usually high and as far lateral as possible, a small incision is made by inserting a scalpel through the "working opening." Two forceps are then passed through this opening and out through the anastomosis opening, each forceps grasping one of the lateral flaps of the ureter. The sutures, which are four in number, are now put in place. The first, or posterior one, enters the bladder wall from a posterior direction, and after penetrating the serosa and muscularis, leaves the wall very close to the anastomosis opening; it then takes a similar hold in the posterior flap of the ureteral wall, about one-half cm. above the level of the slit, and crossing the ureter above the slit it grasps the posterior wall again, and descends to enter the bladder wall on the other side of the anastomosis opening, entering this time from the outer direction and passing posteriorly. A similar suture is set in the anterior ureteral wall. After denuding the flaps of their serous coats, the forceps draw them into the bladder, and the two external sutures are tied. These two sutures make a very firm anastomosis, but the addition of a square suture, fastening each lateral flap to the bladder wall, is a simple procedure and gives to the operation its claim of absolute safety. The flaps, still held by the forceps, are inverted into the working incision and a rectangular piece of bladder mucosa, corresponding to the size of each rectangular flap of the ureter, is cut off from either side of the anastomosis opening. The flap sutures penetrate all coats of the flap except the removed serosa. The sutures are of silk and are tied in the bladder, where they are left and removed at some time later through the urethra by means of the cystoscope unless suprapubic cystotomy is indicated, the working incision is now closed. In suitable cases the entire operation may be done extraperitoneally through an inguinal incision. Whenever possible the field of operation should be entirely covered with peritoneum. As too great stress cannot be laid upon the preservation of the ureteral sphincter muscle, uretero-ureteral anastomosis should be done whenever possible.

Gastrointestinal Hemorrhage of the New-born.—The occurrence of this malady in the new-born is less at this period (J. F. MORAN, Am. Gyn., Nov., 1902) than at any other time of life, but its mortality is very high—50 per cent. The etiology is very obscure, and the course of the disease in the cases which recover is about 48 hours,—it is self-limited, the hemorrhage usually ceasing with the complete evacuation of the meconium. Among those factors which have been mentioned as the cause of the disease are, changes in the circulation incident to the establishment of respiration, delicate condition of the blood vessels, inherited diathesis, cyanosis, external violence, difficult labor, malformation of the heart and other organs, chilling of the surface and bacterial infection. There are three pathological stages of the hemorrhages of the new-born: (1) those occurring shortly after birth; (2) those associated with some pathologic condition of the blood or blood vessels, as purpura hemorrhagica hemophilia, and eruptive fevers; (3) those due to local causes, as ulceration in typhoid, severe intestinal inflammation, mechanical irritation, lumbrici, etc. Many authorities claim that constitutional diseases, syphilis, etc., are etiologic factors in the production of the trouble. Klebs (1875) found constantly the bacterium which he named "monas hemorrhagica" in the vessels of the new-born dying of melena. The writer thinks that the self limitation of the disease would seem to show, that whatever the cause, it is but transitory, and the other signs and symptoms are but of secondary importance. The indication of treatment are threefold: to control the hemorrhage, maintain forces, and remove cause. In light cases, the promotion of respiration; absolute rest, external heat, bland nourishment, preferably albumen water and brandy, will usually suffice. The various vegetable and mineral astringents are of little or no avail as the stomach in the majority of cases is in an irritable condition, which is only aggravated by their action. Salt solution by the rectum is of little use as it is not retained, combined with gelatin and administered subcutaneously, has given excellent results. The author reports a case thus treated with cure.

Electrothermic Hysterectomy.—In the treatment of cancer of the uterus hemostasis has always been most important for those cases that do not well stand the loss of blood. Another important point in this disease is that we should hemostase in the tissues as far removed from the uterus as possible, with the view of going beyond the limits of malignancy. A. J. DOWNES, (Am. Gyn., Dec., 1902) insists that all malignant cells at the line of section should be killed; the lymphatic leading from this line should be sealed and rendered non-absorptive. Electrothermic hemostasis alone can fulfil these requirements. The outfit for electrothermic hysterectomy consists of three angiotribes, all alike except in the size of the blades which vary in width only. The heating apparatus is such that the acting blade can be brought to the proper temperature in from ten to twenty seconds according to the size of the blades. The cable is made in two parts, one, which does not require sterilization and brings the current from the transformer to the operating table, the other, flexible and covered with lava strips, can be sterilized and be placed with our instruments. They are connected at the edge of the operating table. The author's knife is required. Where there is no street current a storage battery of 75 ampere hours' capacity when fully charged will give sufficient current for the three major operations. By this method the author has performed five hysterectomies for cancer. The forceps are applied as in the application of the angiotribe, and then the uterus is cut away by means of the electrocautery knife. The operations were less bloody than by the ligature method. As a type of operation that can be done by this method, it can be said that any hysterectomy that can be performed by ligature, can more readily be done by electrothermic hemostasis. The writer thinks that any operation so practicable as this method, is worthy of serious consideration and should be given a fair and honest trial.

An Intra-uterine Applicator for Fluids.—A mechanically ingenious, yet surgically dangerous, device is the following, reported by H. GLÖCKNER (C'blatt f. Gyn., Dec. 20, 1902): An inlet and outlet tube, modeled in general to the size of a rather large intra-uterine sound, are fastened side by side, with the outlet really embracing the inlet tube. At the surgeon's end of the latter is affixed a rubber bulb into which the medicament is to be drawn. The bulb is armed with a metal outlet, turned to make the slip-joint with the inlet tube of the nozzle. The stop-cock in the inlet tube of the nozzle closes it at will, and similarly, the one in the outlet tube. With the bulb filled and connected up, the stop-cocks of the nozzle are opened, and pressure upon the bulb squirts the fluid into the uterine cavity.

A New Breast Pump.—The difficulty of keeping the following apparatus aseptic and perfectly safe for use, except in the hands of those who are trained in asepsis, constitutes the great objection against it. The main apparatus, says H. GLÖCKNER (C'blatt f. Gyn., Dec. 20, 1902), consists of an ordinary breast pump, as seen in the shops in this country, namely, a large glass bulb with a flaring mouth, of such form as to make it readily adaptable and tightly fitted to the breast. A vacuum is created by a rubber bulb. Opposite the attachment of this bulb is a tube leading out of the bowl, provided with a stop-cock, and to the mouth of this stop-cock is affixed an ordinary rubber tube. At the end of this rubber tube is a small piece of glass tube, for observation purposes, and over this observation tube is slipped an ordinary bottle nipple. The purpose of this apparatus is that the mother pumps the glass bulb full, opens the stop-cock, and, after milk has appeared in the observation tube, allows the infant to suckle at the nipple.

Endothelioma of the Uterus.—Endothelial tumors of the uterus are very rare and the one removed by O. SILBERBERG (Arch. f. Gynek., Vol. 67, No. 2) projected into the interior of the uterus and at first sight suggested a myoma which had undergone carcinomatous degeneration. It was of dirty-gray color, smooth surface and firm consistency. On incising the tumor, two different portions could be distinguished, an external one, dark in color and dense to the feel, and an inner, softer portion. The microscopical examination gave the typical picture of endothelioma with considerable areas of degeneration. No difficulty was experienced in making the diagnosis, but angiosarcoma had to be carefully excluded. Since the patient declined a larger operation and was lost sight of, the further course could not be ascertained.

Mortality in Pelvic Operations.—A series of 100 consecutive abdominal operations for pus in the pelvis with two deaths are discussed by HUNTER ROBB (Jour. Am. Med. Assoc., Jan. 17, 1903). From a consideration of the bacteriological and operative questions he believes that the mortality following operations for diseases of tubes or ovaries can be kept under five per cent. The virulence of the specific organisms present, the individual resistance of the patient, the time and manner of carrying out the operative technic largely influence the death-rate. *Streptococcus pyogenes* is usually the most virulent. As the organisms are generally dead, abdominal drainage is seldom called for, and is only necessary when it is impossible to remove the suppurative structures or where bowel perforation is feared from the separation of adhesions. The pus and its products may be satisfactorily removed by irrigating the pelvic cavity with salt solution. Leaving 300 to 500 c.c. in the abdominal cavity dilutes and promotes the rapid absorption of inflammatory products. This and elevating the foot of the bed for twenty-four hours tends to prevent the intestines and omentum from coming in contact with the immediate field of operation and diminishes the liability to adhesions. Should symptoms of infection follow operation, there is usually sufficient time to open the abdomen and wash out infectious material. The author thinks that operations for pus in the tubes and ovaries from the standpoint of the pus per se are not surrounded by any more danger as a rule than those in which a purulent focus is not present.

The Influence of Menstruation on Gastric Activity.—Both gynecologists and therapeutists (Müller, Eisenhardt, Freund, Jaworski and others) have long made the subject of their studies the influence of diseases of the sexual organs of the woman on disturbances of the gastro-intestinal system. LIEMBICK'S (Pezeglad lekarski, No. 43, 1902) after a series of experiments on the connection between menstruation and gastric activity in the healthy woman, arrives at the following conclusions: (1) There is an undoubted connection between the two; (2) during the menstrual period there occurs an increase in the acidity of the gastric secretions—the so-called hyperaciditas menstrualis; (3) there is at the same time a hypersecretion of the gastric juice; (4) the motor activity of the stomach is considerably lowered during menstruation; (5) all these phenomena are of reflex origin. The practical value of these phenomena, even though not so great, is nevertheless important enough to attract our attention; (*a*) the stomach contents should not be examined during menstruation as the results obtained are not to be relied upon as a true indication of the individual's gastric activity; (*b*) in case there appear any gastric disturbances in a menstruating woman, we should rather resort to alkalies than acids; (*c*) women who suffer from ulcers of the stomach should observe an especially strict diet and rest during their menstrual periods, for it is at this time that the morbid process is liable to become worse, and even hemorrhage may appear. In some cases the author observed increase of the acidity and hypersecretion of the gastric contents during the interval between two menstrual periods, a condition analogous to what the Germans call Mittelschmerz. Under this we are to understand the appearance in the interval between two menstrual periods of various painful sensations, such as gastric, abdominal and lumbar pains, a sensation of weight in the pelvis, sometimes an increase in the vaginal secretions, etc., announcing the approach of the menstruation. Fliess asserts that the majority of women know of these "intermenstruating" symptoms. It seems that the heightened irritability of the nervous system in the woman at this period is reflected not only on the whole system, but also locally on the activity of the stomach.

Vaginal Cesarean Section.—Since Dührssen first advocated a vaginal Cesarean section, and employed for it the ordinary cervical incisions, his technic has been carried out by a great number of operators. E. BUNN (C'blatt f. Gyn., Dec. 7, 1902) after considerable experience with the operation in a large variety of diseases, concludes as follows: "When no carcinoma is present, it is much better to use the following technic: The vaginal portion of the cervix is exposed, with large retractors and Collins' hooks are inserted in the lateral ends of the external os. Then a sagittal cut five to seven cm. long is made in the mucous membrane over the front wall of the vagina up to the lips of the external os. The cellular tissue between the bladder and the cervix is now gently cut through with scissors and the bladder is pushed upward and forward until the internal os of the uterus is reached. The cervix is then divided in the middle line over the entire region exposed. The two margins of the wound are now seized in exactly the same manner as in morcellation or in vaginal myomotomy, with the two Collins' hooks. In this manner still further portions of the lower segment of the uterus are approachable. The bladder is again pushed still higher up, and the portion of the uterus thus exposed cut through. This maneuver is repeated again. Thus the cervix and the front wall of the uterus is comparatively easily divided under direct control of the eye, and without going through the anterior vault of the peripherneum, up to a point between 8 and 12 cm. from the external os. Through such an incision the surgeon's hand may be readily passed, and even large children withdrawn. After this procedure, the uterus is sewn up with a line of catgut sutures, and finally the union of the mucous membrane ends the operation.

Conservative Operations on the Ovary.—The Importance of conservative operations on the ovary lies in the possibility of such procedures resulting in the removal or cure of diseased portions of this organ without detriment to the healthy structure. L. H. DUNNING (Am. Gyn., Dec., 1902) is most assuredly impressed with the fact that operations (conservative) upon sterile married women are unfavorable, and most unfavorable upon such barren women as are determined to bear children. Under other conditions, where it is possible to do so, it is best to leave in as much of the diseased ovary as is possible. Especial stress is laid upon the wholesale removal of cystic ovaries, many of which the writer believes to be removed unnecessarily. The following are the conclusions arrived at: (1) Operations upon ovaries that preserve the menstrual and reproductive functions should be employed in lieu of complete extirpation, especially in cases of extirpation of one ovary and where the remaining ovary shows, as pathological changes, a single cyst of moderate size, or several small cysts, or a single small hematoma; (2) healthy displaced ovaries may, with advantage, be anchored in as nearly normal position as possible by stitching them with fine catgut to the posterior surface of the broad ligament or by shortening the infundibulo pelvic ligament; (3) cases of sterile married women and women who are using means to prevent pregnancy are unfavorable subjects upon whom to do conservative operation upon the ovaries; (4) the writer believes that in pus cases, such conservative operations should, as a rule, be avoided.

THERAPEUTICS.

Blood Changes in Syphilis.—Losdorfer has described certain changes as taking place in the blood of syphilitic patients, marked by the presence of peculiar granules in the serum and cells, and also by a noticeable increase in the blood-plates. H. VORNER (Deut. med. Woch., Dec. 18, 1902) has recently observed, however, that the number of blood-plates depended on the presence and degree of an anemia and that in luetics who were not anemic no such phenomenon was observed.

Treatment of Tuberculous Cystitis.—Numerous have been the attempts to stay the progress of the tuberculous process in the bladder and equally numerous and alike unsuccessful the measures used to allay the, at times, almost intolerable pain caused by contact of the urine with the tuberculous ulcerations, writes A. MONFORT (Gaz. Méd., Nantes, Dec. 6, 1902). After having run the gamut of all the remedies in general use for this condition, he has evolved a method of treatment at once antiseptic, sedative and healing, which, if it may not yet, owing to its limited use, be considered in the light of a permanent cure, has at least in the author's experience, fulfilled all the conditions requisite for the control of distressing and dangerous symptoms. This method consists in lavage of the bladder with salt and water, 7 in 1,000, and local medication with guaiacolated iodoform and sterilized olive oil in the following proportions: Olive oil, 100 gm.; guaiacol, 5 gm.; iodoform, ½ gm. With the antiseptic, healing and analgesic properties of the latter, guaiacol combines to form an admirable remedy for the treatment of this painful form of cystitis; and the preparation makes it possible to use a full lavage of artificial serum; the painful effect of the contact of salt with the ulcerations being entirely nullified thereby.

The author believes the effect of artificial serum to be as beneficent in tuberculous cystitis as in tuberculous peritonitis; and makes a full injection of it into the bladder, directing the patient to retain it as long as possible. Under this combined treatment pain and hematuria are said to cease and micturition becomes less frequent and then normal. At the time of writing, several cases were improving under this treatment, and one case is quoted in which the cystitis was apparently cured; but one of the kidneys subsequently became affected. The author has in view the direct treatment of the kidneys with these remedies through catheterization of the ureters.

Mucomembranous Enterocolitis Treated with Methylene Blue.—A cure of this most troublesome affection, in a nervous woman of constipated habit, was accomplished by T. Cecchetelli-Ippoliti (Gazz. Osped., Dec. 14, 1902), who proceeded as follows: The patient was put upon a diet of milk and broths combined with somatose; and vichy water was prescribed. Irrigation with a two-per-cent. solution of methylene blue was practised twice daily, and by mouth a pill containing a centigram of methylene blue was given four times daily. This treatment was continued for twenty days; at the end of which time, marked improvement was seen. Hydrotherapy, abdominal massage and administration of iron completed the cure; which, after eight months' freedom from symptoms of the disease, the author feels justified in considering a permanent one. The favorable results obtained are attributed to the influence of methylene blue upon the nervous system, and to its disinfectant and antifermentative properties.

The Preparation of Benzoyl-Acetyl Peroxide and Its Use As an Intestinal Antiseptic in Cholera and Dysentery.—Bacteriological investigation having shown that solutions of benzoyl-acetyl peroxide are extremely active as germicides, and an attempt to procure a shipment from the United States having resulted in failure, it was decided to prepare this chemical In the treatment of cholera benzoyl-acetyl peroxide The method of preparing this peroxide is described by P. C. Freer (Bur. of Govt. Lab. Bull., 1902, No. 2). In the treatment of cholera benzoyl-acetyl peroxide was at first given by mouth as frequently as possible in solution of 1 to 1,000, and by high rectal injections every six hours. For stimulation, brandy and strychnia were given hypodermically, and if the general condition of the patient was good, morphia was sometimes given to relieve pain. Turpentine stupes and hot water bags were also used to relieve pain. Vomiting was generally stopped by cocaine and cracked ice. In some hospitals the administration of double gelatine capsules containing each 0.25 gram of benzoyl-acetyl peroxide was resorted to, as it was found that the continued administration of solutions per oram produced vomiting. The high rectal injections form an important part of the treatment, especially in the second stage, when the bowel movements are approximately few, because the colon then contains a large amount of toxin which is flushed out by this means. Omitting deaths occurring immediately after admission to the hospital, and counting only those occurring six hours or more after admission, the mortality in 120 cases was 45.71 per cent. The native mortality was probably increased, owing to the difficulty in inducing native patients to take any medicine at all. Of six Americans treated, four recovered and only two died. Benzoyl-acetyl peroxide also gave very satisfactory results in eleven cases of amebic dysentery; it not only attacks the amebæ, as does quinine, but it also attacks the bacteria which are present in the intestines, and it has been found possible by its use to greatly reduce the number of micro-organisms in the stools. This is important for the reason that bacteria closely follow the amebæ into the openings made by the latter in the mucosa; and cause increased destruction of tissue. When pyogenic cocci are present in large numbers their presence may be the immediate cause of death. In the treatment of dysentery, a 1 to 1,000 solution of the drug is used in enemata, from one to two quarts being slowly injected through a long rectal tube.

Prophylactic Measures Against Venereal Diseases, Especially in the Army.—That venereal diseases are spreading with alarming rapidity among soldiers is an indisputable fact, especially well known to the army surgeons of every nation. Thus Gouladze (Russ. med. Rundschau, No. 1) brings forward statistics proving that out of 900,000 men, embracing the total strength of the standing army of the Russian Empire, there were about 35,000 venereal cases. In speaking of prophylaxis the author insists upon the physician gaining the patient's confidence, so that the full importance of the baneful disease is clearly and understandingly impressed upon the latter's mind. He especially deprecates the use of alcohol, as he finds that out of every ten cases of infection at least seven occurred while the patient was under the influence of Bacchus. Finally, he insists upon the observance of the following prophylactic measures: (1) Avoid sexual intercourse while under the influence of alcohol; (2) absolute abstinence in case any abrasion or erosion be detected on the membrum virile; (3) but one coitus at a time, for it has been proved beyond doubt that males are more readily exposed to infection who indulge in several connections at a séance; (4) anoint the penis just before the act with a thick layer of carbolated vaseline (four per cent.), and insist that your companion wash her genitalia with a three-per-cent. solution of carbolic acid; (5) after completion of the act wash the penis with soap and water, and a one-half-per-cent. solution of sublimate, or, when not at hand, with clean plain water, or with one's own urine.

The Treatment of Aneurisms by Subcutaneous Injections of Glycerin.—As based on the results of his own cases and those published so far, the conclusion of Korkunoff (Russ. Archiv., Pt. 13, 1902) seems to be that the subcutaneous injection of glycerine has been of quite marked benefit in many cases of aneurism, and this method of treatment deserves further trial, the more so as it is entirely devoid of any danger. He corroborates the assertion of Florencio de Castro that this method of treatment is the only means in our possession whereby we are enabled to relieve the patient's suffering, and even prolong his life. The following points are to be kept in mind: (1) The subcutaneous injections of glycerin being positive, result only in cases of sacculated aneurisms, in which there are no serious complications or accompanying organic diseases of important organs; (2) it thus follows that this method of treatment should be resorted to at an early stage of the disease before the occurrence of irreparable damage to the organism; (3) The treatment should be applied energetically, namely a whole series of injections must be performed, in accordance with the course of the affection and the degree of improvement. The treatment may have to be repeated, and it thus becomes necessary to keep the patient under one's care for a considerable length of time; (4) the amount and strength of the injection are to be determined by individualizing every case separately; (5) the introduction of the fluid must be done slowly, gradually and under strict asepsis; (6) the result is not to be considered in the light of a cure, but simply as a means that tends to diminish the circumference of the aneurism, at the same time causing, as is to be assumed, a thickening of its walls. This effect is evidently in close connection with the formation of connective tissue in the walls of the aneurismal sac with a consequent sclerosis of the tissue.

Treatment of Local Tuberculosis.—Observations on a great number of treated cases led SEREMIS to the following considerations (Med. Obos., Vol. 57, 1902): (1) Patients with local tuberculosis are never to be permitted to remain in the hospital for any considerable length of time; (2) as soon as the nature of the affection becomes clear and operative interference is indicated, the latter is to be resorted to at once; (3) when operating, remove all the affected tissue as thoroughly as possible, after curettage do not sew up the wound, but rather tampon it with iodoform gauze; (4) particular attention is to be paid to improving the general condition of the patient; keep him out in the fresh air, exposed to the action of sunshine; (5) as the patients with surgical tuberculosis require prolonged observation outside of an institution, the author recommends the establishment of branches connected with hospitals for the special treatment of such cases and the popularization, by literary means, of the various prophylactic measures.

Erysipelas and Antistreptococcus Serum.—The favorable results obtained in the treatment of erysipelas in an infant of three months with antistreptococcus serum, contribute additional evidence of the efficacy of this method of treatment, in the opinion of R. G. RIJOX (Chron. Méd., Habana, XXVIII, No. 20, 1902). In the case which he reports, the disease, which had gradually involved the whole body, had been under treatment for three weeks with the various remedies usually employed, and had resisted all. An injection of 20 c.c. of antistreptococcus serum at once brought about a surprising improvement, which steadily continued; so that a second injection was deemed unnecessary, and guaiacol liniment was the only medication used thereafter; the patient making a good recovery within twelve days after the injection.

Mesotan in Rheumatism.—The value of external applications of salicylic acid compounds in rheumatism has long been demonstrated. An ointment containing salicylic acid was chiefly employed, or else the oil of wintergreen, but the former frequently caused intoxication and the latter was objectional on account of the odor. In mesotan, the methoxymethylester of salicylic acid, H. RÖDER (Münch. med. Woch., Dec. 16, 1902) sees a long-felt want, since this combination is free from these objections. He has used it locally with marked success in rheumatism affections of muscles, joints and fasciæ, in influenza and arthritis deformans, and failure was only seen in the very chronic cases. It is good to dilute the mesotan with an equal amount of olive oil and the only bad after-effect which is liable to follow, is a slight dermatitis.

Effect of Hypnotism Upon the Circulation.—By means of sphygmographic tracings, Dr. BÉRILLON (Jour. de Méd. de Paris, Dec. 27, 1902) has studied the effect of hypnotic suggestion and simple hypnotic sleep, without suggestion, upon the normal pulse and upon that of patients affected with functional circulatory disturbances. In a normal subject, slowing and acceleration of the pulse was obtained by suggestion; and in a hysterical subject affected with tachycardia, distinct diminution in the pulse-rate was induced by suggestion. Under the influence of simple hypnotic sleep, without suggestion, marked improvement was noted in the pulse and heart-action of a subject suffering from a functional cardiac affection. The effect of hypnotic sleep upon arterial tension was also striking; in those in whom the tension was above normal it was common to find an increase of more than 100 grams; while in subnormal tension the increase did not appear for some time, and it was necessary to prolong the sleep for several hours to obtain the best results. In cases of normal tension, the increase was even slower in appearing, and less marked. These effects could be produced only when the hypnotic sleep was rendered as nearly as possible like natural sleep; this being accomplished by repeated suggestions to the patient that he would sleep as quietly and restfully as though in his own bed, etc. Hypnotic suggestion was also effectively used in a case of hemianesthesia accompanied with subnormal arterial tension upon the affected side. Under hypnotic suggestion anesthesia was transferred to the opposite side, and with it the abnormal pulse appeared also upon that side.

Value of Cancroin.—Cancroin has been much lauded as a specific against carcinoma, and its discoverer has published many apparently convincing cures. J. DECKER (Münch. med. Woch., Dec. 23, 1902) has employed it freely in several cases of carcinoma of the esophagus, stomach and intestines and in no instance has he seen the slightest benefit. In most the injections are well-borne and only once was the patient troubled with pains in the neighborhood of the injection and symptoms of collapse which disappeared rapidly with camphor. The true specific for this terrible disease has still to be found.

Adrenalin.—To test the efficacy of the commercial solution of adrenalin as hemostatic, D. LEHMANN (Münch. med. Woch., Dec. 9, 1902) excised a portion of the liver of a rabbit and then applied cotton saturated with the solution to the raw surfaces. The hemorrhage did not cease but the animal recovered perfectly after the abdomen was closed. Probably the strong current of blood washed away the drug before it had an opportunity to act. When the solution was injected under the capsule and into the liver, even large pieces of liver could be removed without the loss of a single drop of blood. Though the liver again filled with blood in a short time, no bleeding occurred from the raw surface, owing to the formation of thrombi. A toxic action was never observed.

Creosotal in Croup.—The good results obtained with creosotal in diseases of the respiratory organs have tempted L. LASANSKY (Deutsch. med. Zeitsch., 1902, No. 91) to try this drug in croup, with pronounced success. In one case a complicating pneumonia was checked at its onset and a favorable change in the croup itself brought about overnight. Two similar cases also improved rapidly, while some of those treated with serum died. The author now prescribes creosotal in pseudocroup, measles and pertussis, and is well satisfied with the results. At first a dose sufficiently large to cause the characteristic odor about the breath and perspiration must be used; when the fever falls, smaller doses are employed for some time to prevent a recurrence. As vehicle, the old-fashioned infusion of ipecac with anisated ammonia is excellent.

Use of Itrol and Cuprocitrol.—Washing the eyes with a three-per-cent. solution of boric acid and then dusting itrol into the conjunctivæ, forms an excellent treatment for gonorrheal ophthalmia. After a few applications D. CERVICEK (Militärarzt, 1902, Nos. 19 and 20) has seen the purulent secretion disappear in 65 per cent. of the cases, in the others, from 6 to 20 applications were required to cure the disease. The reaction which follows varies considerably with the susceptibilities of the different patients and on the whole is somewhat more severe than with the usual silver nitrate solution; on the other hand, itrol is easier to apply and has a more prolonged action. After a while, a tolerance is established, and the patients no longer complain. The results were also gratifying in discharging trachoma. Great care must be exercised to protect the drug from light, as it readily decomposes. The treatment of trachoma by means of massage with a five-per-cent. ointment of cuprocitrol must be regarded as another advance in ophthalmology, for astonishing results were obtained with cases of as much as eight years' duration. The massage must be gentle but thorough; it is best conducted with a glass rod.

Alkaloids of Ipecac.—In an elaborate article, C. LOWIN (Arch. Internat. de Pharmacodyn., Vol. XI, fasc. 1 and 2) reviews the published literature on ipecac and adds his own observations on the physiological action of the different alkaloids. The toxic symptoms caused by cephalin hardly differ in any respect from those of emetin. Both alkaloids irritate the mucous membranes, hence many who come into intimate contact with the drug suffer from conjunctivitis, coryza and cough. The subcutaneous connective tissue is not irritated, since in none of the animals did inflammation develop at the site of injection. This proves a specific irritating effect of the drug upon the mucous membranes. Both alkaloids are cardiac poisons. The injected animals die of cardiac paralysis. Emetin injures the heart in much smaller doses than cephalin and affects more the frequency of contraction, while the latter exercises its influence more upon the pressure. The characteristic intestinal symptoms are caused by both, but cephalin acts more upon the kidneys. Part of both alkaloids seem to be excreted through these organs. Poisoning with emetin leaves the lungs free of pathological changes; with cephalin there may be slight extravasations of blood. Vomiting may be induced by both, whether given by mouth or subcutaneously, but cephalin is undoubtedly superior in this respect, while emetin is the latter expectorant. From the composition of the two varieties of the drug, it follows that Rio ipecac is to be preferred as expectorant and Carthagena ipecac as emetic; where, however, the patients are only allowed to gargle, on account of weakened cardiac action, the latter is also better as expectorant.

Toxicity of the Active Principle of the Suprarenal Glands.—It is now established that epinephrin is the active principle of the suprarenal glands and that chemically it is very closely allied to the commercial adrenalin, so that practically they may be considered alike. That adrenalin is not so harmless as its discoverer claims, is evident from the animal experiments of S. AMBERG (Arch. Internat. de Pharmacodyn., Vol. XI, fasc. 1 and 2). Injected subcutaneously, intravenously, intraperitoneally or into the spinal canal, epinephrin in large doses causes repeated vomiting, excitement and general weakness, which may end in complete prostration, bloody diarrhea and death. The findings at autopsy are characteristic. Death may be caused by cardiac or respiratory paralysis or by both. The lethal dose lies between one and two milligrams per kilogram intravenously. The subcutaneous lethal dose lies between five and six milligrams, the intraperitoneal between 0.5 and 0.8 milligram. Since the human body is less resistant to the effects of the poison, the utmost caution should be exercised in the therapeutic use of suprarenal extract.

The Future of Electrotherapeutics.—No other department of medicine, either in this country or in the British Isles, is so ravished by the quack and the impostor. EDMUND OWEN (Brit. Med. Jour., Jan. 3, 1903) in an address at the first anniversary meeting of the British Electrotherapeutic Society, said that there is something in the brass balls which glitter so attractively and spit forth purple fire which does away with the common sense of the ordinary every-day Britisher. To this usually sensible person electricity is electricity. There is something mysterious and uncanny about it which leads him to suppose that his ills can better be cared for by a quack, who may too often come from the United States, than by a licensed physician. He detailed an experience of a friend of his who went to a prominent and exceedingly popular institution in London, devoted to the treatment of skin disease by Finsen's light and the X-rays. A man entered and asked for the physician-in-charge. "I am the nurse," said a woman, dressed in that garb, "and will care for you." She proceeded to treat him. He left and paid a guinea. I asked her what was the trouble with the patient. She replied, "That's lupus. I see so much of it I know it in a minute." She know lupus, than which there is no more difficult lesion to differentiate! He urged upon the members the crying need of a central electrical institution which should be a sort of club-house where meetings could be held and where ordinary club-life could be maintained. More than this, it would help the younger members of the society, and indeed many of the older ones, if they had some such place where every known form of electrical device was free for their use at stipulated hours. There they could take their patients and treat them, for nurses should be in attendance throughout the day. It would be the most important step toward doing away with the power of the rogue and the charlatan who now take from the electrotherapist what is justly his. He declared that so important was this therapeutic agent that a section devoted to its development should be inaugurated as an integral part of the British Medical Association, and he hoped that such a section would be created at the next Swansea meeting.

Atropine in Intestinal Occlusion.—Although the cases of intestinal occlusion treated with injections of atropine after Batch's method, have not been sufficiently numerous to warrant positive deductions concerning the value of this method of treatment, the results obtained have been uniformly favorable in the cases reported, says V. FABRIS (Gazz. Osped., Jan. 4, 1903). In illustration of its beneficent action, the author describes a case of occlusion in which he used the remedy after all other measures had failed, and operation seemed inevitable. Four injections of atropine one mm. were given at short intervals; and after the fourth, the patient passed a quantity of gas from the bowels, vomiting ceased and shortly after, a considerable amount of fecal matter was passed, accompanied with severe colic. A second stool soon followed, and the patient's distress was entirely relieved. The author urges the invariable essayal of this remedy in all such cases, as it is prompt in effect, and, in the event of its failure to relieve, surgical intervention is not too long ostponed by its trial.

Anuria Without Uremia.—The pathogenic relation between anuria and uremia would seem questionable, when cases of anuria without symptoms of uremia are taken into account. L. POLIDORO (Gazz. Osped., Dec. 28, 1902) reports such a case in which there was no slightest trace of uremia after complete urinary retention during seven days; neither was there compensatory elimination by the other emunctories. No less an authority than Maragliano has chronicled the frequent occurrence of uremia when urinary elimination was of normal abundance; and a like experience has been reported by other eminent observers. In view of these observations, there seems to be ground for the belief that retention of excrementitious matter ordinarily eliminated by the urine, does not play the important part formerly attributed to it, in the pathogenesis of uremia.

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THE AMERICAN BIRTHRATE.

IN the January number of the *North American Review* a very prominent woman advocate of women's rights has an article on the limitation of families from the standpoint of the right of the child to be born under circumstances that make life easy for it, or at least give it its full development as a human being. In answer to one of the objections to her theory she says: "It is insisted that people of means and education should have a large number of children, because the poor and ignorant produce so many, but does it help the latter to become desirable citizens to place over them a still greater number who are infinitely better prepared in every way for the battle of life? The immense reproduction of the lower classes is unavoidable, and instead of trying to outnumber them the better classes can more effectually serve society by having smaller families themselves and applying the surplus parental affection and care and the surplus time and money toward fitting those unfortunates for respectable and useful lives."

This is indeed altruism pushed to its farthest degree. It is beautiful in theory, but we doubt whether in practice any such refined transcendental motives will have any influence over men and women. They are only a mask for the selfishness that refuses to accept the duties and responsibilities of parenthood, and pretends, perhaps even to itself, to make up for them by a display of voluntary benevolence.

An interesting commentary on talk of this kind is furnished by the statistics of the birthrate, as given by the last annual report of the registry department of Boston. Not since 1894 have so few children been born in Boston. In 1901 the birthrate was only 27.10. During the year there was an actual gain in population of only 4,275. The proportion of native whites of native parentage is now only 36 per cent. of the whole population, and many of these are but two removes from an immigrant ancestry. It is very evident that the old American stock is dying out and that it will inevitably be replaced by the newcomers of the end of the nineteenth century and the beginning of the twentieth. The foreign-born element constitutes about one-third of the population, but contributed about two-thirds of the births. Among the Italians there were 1,411 births, among the Russians 1,337, and among the Irish 3,591.

The highest birthrates in the city are found in those wards where live the poor and the foreigners. The lowest birthrates are found in the Back Bay and in the South End, in the middle of Roxbury, in West Roxbury and in Jamaica Plain. Three of these wards actually show an excess of deaths over births.

A weekly paper published in Boston says: "On the whole, Boston is a healthy town, but not particularly fruitful. Our people, by the help of parks, gymnasiums, boulevards, baths, health foods and common sense, manage to steer the middle course between McFadden and the doctors and postpone death with some degree of success, but many of them do not provide for a line of succession. This duty is left to a small minority of aliens, whose descendants must inevitably move into Commonwealth avenue when the present tenants are all in Mount Auburn (cemetery)."

This was not the way of the Puritans, who did so much to make our country what it is. Priscilla Mullens, of the unromantic name but romantic fame, had a vigorous family of eleven children. Most of the Puritan families whose descendants have become distinguished in the history of this country were of large size. It is not the meddlesome coddling care so often given to the one or two children of a small family that serves to bring out character and make worthy men and women. No better training can possibly be provided for children than that which comes naturally and in due course in the midst of brothers and sisters.

There is some truth in the statement that the American national problem will soon be, if it is not already, the same that is facing the French people, namely, of depopulation. We would at the present moment be already depopulating if it were not for immigration and the birthrate among immigrants. It begins to look as if the highest form of patriotism would be the raising of distinctly American families whose members shall serve to perpetuate the traditions of past generations. Certainly none of the lofty philanthropic purposes assumed, as the self-satisfying aims of the new woman, are near as likely to prove so fruitful of good for this country as the plain duty of providing and training a numerous generation of true Americans whose nationality is the birthright of long years, not a recent acquisition. Physicians, whose influence in such matters is apt to count for much, should themselves realize this fact and let no lower motives interfere to make the true principles of the problem clear to those who seek advice.

A LATER INTERPRETATION OF CZOLGOSZ AND HIS CRIME.

IN the loom of history facts are fashioned at will, but single events must always carry the stamp and color of the hour of their making. The public, the alienists, and the pathologists all concurred that Czolgosz was sane. He was an anarchist who knew the nature and consequence of his acts and was proud of his awful success. Granting that he was insane it seemed even permissible to some that such as he should die in consequence of his crime. However this may be, no adequate evidence until the present time has been forthcoming to show that Czolgosz was insane. Indeed the very nature of the hasty trial, the suppressed and determined hatred of the nation urged swift and quick action. But now we may review the evidence somewhat more calmly.

This work has been signally performed by one of our most able alienists, Dr. Channing, in the current number of the *American Journal of Insanity*. Certainly the evidence presented by Channing controverting that Czolgosz was an anarchist coincides with the facts unearthed since the execution by the most earnest search of capable experts. There seems to be no adequate ground for believing him connected with such a party of disorganization. This practically substantiates Czolgosz's own statement in the matter. The gradual change in Czolgosz's life from one of industry and cheerfulness to that of idle and moody consideration of the "people's" wrongs appeared to pave the way for the unbalancing of an intellect never strong and hereditarily handicapped by a weak but not necessarily vicious family stock. The desire of doing some great act to relieve the pressure of human woes ripened his predisposition to mental alienation and he attempted the futile method of reform common to his class in a successful magnicide.

After arrest Czolgosz never posed as an insane man as Guiteau and cunning paranoics of his type have done before and since. On the contrary he weighed his remarks well after the crime as though "keeping back something." This "something" led many to think that a plot was in hiding, but Channing sees nothing in this but evidence of a disordered mind which after a time might have developed and amplified itself into the possession of well-systematized delusions; on the other hand it might never have developed fully in typical paranoia, but degenerated instead into terminal dementia.

Probably one of the grossest absurdities of modern mental science was that of attempting to prove Czolgosz's sanity or disproving his insanity by presence of stigmata of degeneration and gross or even microscopical findings of the brain tissue after execution. This was attempted, too, in a day when even the physiologists and psychologists are still uncertain whether states of consciousness in this totality (mind) are not really made up in great part from the integrity of the different levels or neuron orders of the entire central nervous organs rather than in the cerebrum alone. There are still many types of insanity in which no characteristic morphological or histological changes are in evidence even by our most modern technic, and prominent in this class are the paranoias, or monomanias and kindred mental disorders of degenerative type in which there is a lack of mental development; where insufficient evolution is at fault and not involution.

The summary of Dr. Channing's collection of data is irrefutable and his conclusions are worthy of serious thought; in brief they are as follows: "(1) I feel that from fuller information than that possessed by those experts who examined Czolgosz after his crime, the opinion then expressed by them cannot be accepted as the final one; (2) owing to lack of time it was impossible, in the examination referred to, to investigate the early history of Czolgosz. Had this been done some of his statements would have been found to be inaccurate; (3) he was not in my opinion an anarchist in the true sense of the word, and while anarchical doctrines may have inflamed his mind and been a factor in the crime, it was not the true cause or an adequate explanation; (4) he had been in ill health for several years, changing from an industrious and apparently fairly normal young man into a sickly unhealthy and abnormal one; (5) while in this physical and mental condition of sickliness and abnormality, it is probable that he conceived the idea of performing some great act for the benefit of the common and working people; (6) this finally developed into a true delusion that it was his duty to kill the President, because he was an enemy of the people, and resulted in the assassination; (7) his conduct after the crime was not inconsistent with insanity; (8) his history for some years before the deed; the way in which it was committed and his actions afterward furnish a good illustration of the typical regicide or magnicide as described by Regis; (9) the post-mortem examination threw no light on his mental condition and would not invalidate the opinion that the existing delusion was the result of disturbed brain action; (10) finally, from a study of all the facts that have come to my attention, insanity appears to me the most reasonable and logical explanation of the crime."

If one grants the conclusions of Channing, the legitimate question is: How much or to what extent did the ends of justice miscarry in the case of Czolgosz?

THE TRIUMPHAL TOUR OF ADOLF LORENZ.

The editor of the *Cosmopolitan* has published in the February number of that magazine, two columns of sincere tributes, under the above heading, in which a few misstatements are made, which, in justice to Dr. Lorenz, should not stand uncorrected.

The way in which he came to devote his energies exclusively to orthopedic surgery lay in the fact that the antiseptics necessarily used in open operations set up a dermatitis of his hands and arms. That was why "voluntarily he closed the door upon his own career," and not because he had said to himself: "I cannot pursue these formulas longer and be honest."

The "ray of divine light—the idea of a new surgery which should not carve and butcher"—came to him from the man whose assistant he had been in the operative work which Dr. Lorenz was most loath, but forced to give up. It was suggested as a field which his idiosyncrasy for antiseptics would not deny to him.

Dr. Lorenz made great strides in this branch of surgery and has helped to raise it to a higher level than it has ever occupied before, but Mr. Walker makes an idiotic mistake when he says that the world went on its stupid way until one day a rich American offered a large sum of money for this surgeon to come and operate upon his daughter. The medical profession of the United States would indeed be stupid did it wait for teachers to come here and demonstrate any advances they may have made. It is not the nature of the American, either in a profession or in a business, to do the waiting. The American doctor hustles as strenuously as his fellow-citizen. It is not too much to assert that we know of every new method of operation and every new form of examination and treatment advanced by a foreign physician or surgeon as soon as the closer associates of the discoverer or inventor. Every day in the year Americans are earnestly studying in every large medical center of the world. Many of the 255 medical journals published in this country have special correspondents, not only throughout Europe but in the Orient as well. The cables, together with the mails, are employed to keep the American physician abreast of the progress of medicine in all its branches the world over.

The best known operation of which Dr. Lorenz was the originator, has been practised in this country for many years and with excellent success, in fact, in large measure, it had its origin here.

The greatest good to the public, from his tour of this country, lies in the fact that it has excited an interest, such as nothing else could have done, in the great number of deformed children we have in our midst and the amount of good which can be done for them. Chiefly through the newspaper accounts of Dr. Lorenz and his work, charity has been awakened to an interest in these pitiful cases so long neglected by the public. Our surgeons have been laboring for years to obtain the interest of our legislative bodies and our philanthropists in these children, who can be made useful citizens, but, neglected, must ever be a burden to the State.

It would have taken a decade longer to attract such public notice to this field of work, as has now been brought to it by the visit of this most eminent Viennese surgeon.

It was a triumphal tour, but let us have the plain, simple truths—surely Dr. Lorenz would wish it.

THE GROWING HISTORICAL SPIRIT.

THE progress of medicine in America during the past quarter of a century has been like the onward rush of mountain climbers who blaze a path through the unbroken forest to the untrodden heights that they have seen above. A more exciting, breathless, expectant quarter of a century than the last has never been passed in the history of medicine, and it is small wonder that the men who have been pressing up the steep incline have had little time or opportunity to turn around and view the past. But it is a sign of the heights attained that there is a tendency among the climbers to take a moment's rest and look at the healing art in a wide-eyed philosophical way, and to review the steps by which they and their forerunners have risen.

There has been an occasional history of medicine and an occasional stimulating biography of a physician, but literature as such has not been greatly enriched by medical lore among us. Occasionally a twin genius has been born in one body, as in the case of Oliver Wendell Holmes, or S. Weir Mitchell; but even they have contributed more to literature from the standpoint of the poet and novelist than from that of the physician.

We note, however, with pleasure, the growing spirit to make a place for medicine in American literature. In 1898 a few physicians in New York City of literary tastes organized a club among themselves for the purpose of devoting a few hours a month, by way of recreation and profit, to the study of literary, artistic, and historical aspects of medicine. They called themselves the Charaka Club, choosing the name of one of the "ancient trio" of Hindoo sages, indicative of the philosophical and antiquarian nature of the club's work.

Some of the literary material brought together in these meetings has lately been printed in a finely finished book, of which the Club has issued a too limited edition for its members and friends. There is a charm in the style and finish of such papers as the one on Hindoo medicine by Dr. B. Sachs and the Cult of Æsculapius by Dr. Charles L. Dana that is very refreshing, especially when one realizes that nowhere in American literature could one find anything that would give a vivid conception of the beginning of medicine as embodied in these papers of ancient medical lore in India and in Greece. The collection of pictures of the busts and statues of Æsculapius is excellent, and the reproduction of the Heiron or Sacred Grove with the Temple of Æsculapius, to which the pilgrims used to flock, and the Sacred Well, with its forty-pillared Tholos, gives one an architectural thrill that is wholly unknown in these days of atrocious hotel and pavilion structures that cluster about our modern Spas.

Among other contributions to the proceedings of the Charaka Club, more modern in their subject, but none the less literary in their handling, are three little poems by Dr. Frederick Peterson called Heredity, Environment, and Solitude. They touch the facts of science with the imagination of the poet, and read a deeper meaning into the titles than one can find in the text-books.

Contemporaneous with the publication of the Proceedings of the Charaka Club, is a new journal entitled the *Medical Library and Historical Journal*. It is to be devoted entirely to medicine in its literary aspect and it opens with an excellent number of contributions, chief among which is an article on the Medicine and Doctors of Juvenal, by Dr. Eugene F. Cordell. In its editorial introduction it purports to supply to medical historians, librarians and bibliophiles an exclusive medium of intercommunication.

The awakening of interest in medical history is apparent in many directions. The simultaneous appearance in print of the *Charaka Club Proceedings* and of *The Medical Library and Historical Journal*, is but the crystallization of a widely diffused spirit. The reception of the various historical articles that have appeared from time to time in the MEDICAL NEWS, the history of the growth of the American medical colleges, the biographical articles on old New York medicine, and the By-Ways of Medical Literature, indicates the desire of the busy man to relax himself a little within the bounds of his own profession.

ECHOES AND NEWS.

NEW YORK.

New Appointment.—The Lunacy Commission has just appointed Dr. Carlos F. Macdonald as Consulting Physician to Manhattan State Hospitals.

Yellow Journalism and Bellevue.—Some recent criticism of the Gouverneur ambulance service has gone amiss as usual. The yellow daily press described another case of what they considered the ambulance surgeon's neglect, which turns out that the patient had died in the station house before the arrival of the ambulance.

Cholera Infantum Serum.—Commissioner Lederle of the Health Department reported last week that the Department hopes to have a serum for cholera infantum ready for the coming season. The loss of infant life from this disease is deplorable. The bacillus described by Dr. Hiss in the last issue of the MEDICAL NEWS is being worked with, with the hope of developing a serum.

Ithaca's Epidemic Subsiding.—The tenth case of death among students of Cornell University in the typhoid fever epidemic which has prevailed, has occurred. Only a few new cases were reported last week, which shows that the epidemic is subsiding. According to figures given out from the president's office, 21 per cent. of the student body, or about five hundred students, did not attend classes last Saturday. Of these four per cent. are ill in Ithaca. Practically all the rest have gone to their homes. Many more left at the completion of to-day's work. A roll of the instructing staff of the university shows ten professors and instructors ill with the fever.

City Tuberculosis Camp.—The Board of Health is reported to be considering the feasibility of establishing a "tuberculosis camp" somewhere in the State and within 50 miles of this city. The subject was discussed briefly at the regular weekly meeting of the board last Saturday. The tuberculosis committee of the Charities Organization Society has advocated a large hospital outside the city limits for the treatment of consumption. It was estimated that the cost of such a hospital would be in the neighborhood of $400,000. The Board of Health decided that, in view of the fact that the hospital would be an experiment, the cost would be too great, and set about finding other means for the treatment of the disease. The "tuberculosis camp," Dr. Lederle explained yesterday, would cover about 100 acres on high ground. On this ground would be erected a hundred or so tents, of a substantial kind, and costing about $100 each. The tents would be fitted out with floors and stoves so as to be comfortable in cold weather. As outdoor exercise is one of the chief ways of treating consumption, it is believed that the tents would be even better than a large building. The cost for the camp would be about $70,000 or $80,000. Estimates of the cost of the land and camp will be made in a few weeks and the plan submitted to the Mayor. If he approves, the matter will be laid before the Board of Estimate, and if the money is granted the camp will be opened as soon as possible.

Care of Dull Children.—Prof. Earl Barnes, speaking under the auspices of the Child Study Committee of the Associate Alumnæ of the Normal College, on the subject of "The Training of the Dull Child," said that until recently the physically deformed children had been scattered throughout the body politic, and it was only in recent years that they had been segregated and given special treatment. Just now England, Germany, and the United States were taking out for treatment from the people a group of those who were not dangerous, with a view of saving some. Defective children might be divided into three groups: First, those with physical defects, such as hip diseases and similar deformities; second, the deaf, dumb, and the blind; and third, those who were defective mentally, the epileptics, imbeciles or idiots. Of the first group it had been found that there was often no weakening of the mental or moral powers, but, on the contrary, some of these deformed persons had great brain power. These physical defects, it had been proved, could often be cured. The lecturer described the work in a London school, where deformed and crippled children were taken each day, an ambulance being provided to convey them from and to their homes. They were children of the very poor and their lives were being rescued from misery. New York city should have such a school, he said. Of the mentally deficient, Professor Barnes said that returns show that there was at least one per cent. of the elementary school children who should receive special care. In London such work was being done systematically in fifty special centers, and he had met Dr. Warner, who had examined 120,000 more or less defective children. Although education was the biggest business in the United States, there was not a single specialist scientifically studying children. There were specialists in every other business, and more money was being spent by the Government in studying codfish and mushrooms than in studying children. Five thousand defective children could be found in New York city, yet nothing was being done for them. Many of them could be benefited by medical treatment, and medical men should be allies of the teachers in all this work. The simply dull should be separated from the imbeciles. The latter should be placed in colonies, there to remain forever. In such colonies they could be watched by the police officers of the nation, studied by scientific students, and cared for by the philanthropic. For the dull and defective the resources of civilization should be lavishly expended. Special teachers should be hired and they should be in attendance all the time. Classes should never exceed ten or twelve, and the teachers should be free from any kind of curriculum. They must possess the children, body, soul, and mind, and must infuse their own soul and mind into them. Such a work was one of copartnership with God.

The Side of the Street—The *New York Times* has an interesting commentary on a recent paper by a New York physician, which we quote in part: Dr. Alfred E. Thayer of the Cornell University Medical College rises from a prolonged study of mortality statistics with the conviction that if a New Yorker wants to die he ought to live in a house on the north side of the street. Dr. Thayer chose for his demonstration the year 1895—it is astonishing that he overlooked the fact that in that year there were three eclipses of the sun and two of the moon—and made twenty streets, from Fourteenth to Thirty-third, the basis of his lugubrious researches. The total population of these side streets at that period of the city's history was 170,741, there being 84,259 on the south and 86,482 on the north side of the street. In the year mentioned there were 1,869 deaths in houses on the south side of the street, and 2,104 in houses on the north side, being equivalent respectively to a mortality rate of 22.18 and 24.33 per thousand. The showing of these figures is supported by Dr. Thayer with theories and reasoning quite sufficient to educe further statistical confirmation of his argument through deaths from fright among families dwelling in houses upon the fatal north side of the street, while his article is likely to lull the south-side population into a sense of security which may prove to be false. But Dr. Thayer's statistics are suspiciously incomplete in several branches of the interesting inquiry. For instance, he says nothing about broken legs. Everybody knows that there are about three times as many cases of broken legs on the south side of the street as on the north side—in 1895 the percentage for the whole city was, to be accurate, 65.08 for the south siders and 22.11 for the north siders. The disparity, of course, arises from the fact that accumulations of ice and snow on the south side steps and sidewalks do not "get the sun." Upon certain essential factors in a calculation of this nature Dr. Thayer is wholly silent. While it is probably true that in the year chosen for his demonstration the death rate was higher in north-side houses, the investigation is woefully incomplete without a statement of the controlling reason, which is to be found in the careless habits of the people. The lamented Hasenbraten, whose distinguished but ill-requited labors in medical science have won for him the tardy reward of world-wide recognition of his high authority, has recorded the results of deep study of this subject in his great work, "Die Entstehung und Jagd der wilden medizinischen Gans." Dr. Hasenbraten proved beyond possibility of dispute that families whose names begin with "S" should never live in odd-numbered houses. The statistics give overwhelming support to his doctrine, and it is, no doubt, due to wilful neglect of this simple precaution on the part of the incalculably numerous Smith family, that has led to the conditions of mortality noted and deplored by Dr. Thayer. In a short period of three years, during which a family with this initial lived on the north side of Thirty-fifth street, there were three deaths in the house —one from falling down stairs, one from a railroad accident in Ohio, and one as the result of an encounter with footpads in Astoria. Contrariwise, another family bearing the same name lived upon the south side of the same street for thirty years without a case of illness, and the first death occurring in the family was the result of moving to Harlem. The demonstration is quite sufficient to establish the fatal relation between the initial "S" and odd-numbered houses. It is in the interest of owners of real estate on the north side of New York streets that we point out the omissions in Dr. Thayer's statistics and reasoning.

PHILADELPHIA.

Lecture by Dr. Cushing.—Dr. Harvey Cushing of Baltimore was the guest of honor at the annual banquet of the W. W. Keen Surgical Society of Jefferson College, held on February 12th. Preceding the banquet Dr. Cushing gave a lecture in the college on "The Blood Pressure Reaction of Acute Cerebral Compression, a sequel to the Mütter Lecture."

Medico-Chirurgical Hospital Damaged by Explosion.—A hot water generator in the basement of the Medico-Chirurgical Hospital exploded during the early morning of February 12, causing a great deal of damage to the building, but fortunately slightly injuring only one patient. The floor of the rotunda, under which the tanks were situated, fell into the basement. The excitement incident to the explosion was soon allayed by the nurses and physicians. The building will be repaired at once.

Plans for New Municipal Hospital.—Bids for the construction of the new municipal hospital are being received, the sum of $150,000 being available. The plans provide for a Colonial building 200 by 150 feet in size. The structure is to be absolutely fireproof and provided with every facility for disinfection. There will be two large wards each 150 by 35 feet and a dozen smaller wards for isolation of patients with other diseases in addition to smallpox. The building will be heated by hot air on the ventilating system.

Why Smallpox Prevails.—The Health Convention held at Johnstown, Pa., February 12th, discussed the question "Whose Fault Is It?" referring to the prevalence of smallpox in Western Pennsylvania. Enforced vaccination was advised. Dr. Benjamin Lee, Secretary of the State Board of Health, said in part: "We shall find that the responsibility for this unfortunate and disgraceful condition may be widely distributed. The fault lies, first, with the medical profession, for discontinuing the practice of infant vaccination; second, with foolish mothers who wanted to save their babies the slight pain and annoyance that accompanies vaccination; third, with a class of ill-informed obstructionists, titling themselves antivaccinationists, who have endeavored in every possible way to throw discredit on vaccination; fourth, with many of the School Directors of the State, who have neglected or refused to enforce the compulsory vaccination law; fifth, with an immense majority of the school boards of the State in the country districts for neglecting to accept the responsibility placed upon them by act of legislature of organizing as boards of health; sixth, with the medical colleges, for failing so to instruct their students that they might be able to recognize the disease."

Dr. Flexner May Leave University.—The medical school of the University of Pennsylvania is probably about to lose one of its most prominent and valued professors in the person of Dr. Simon Flexner, professor of pathology, who has been offered the directorship of the Rockefeller Institute, in New York. For the past two years Dr. Flexner has been one of the several scientists among whom the income of the Rockefeller endowment for original research has been distributed for work in laboratory and hospital. Now he has been called to take charge of the whole system in order to plan and organize the experiments. When seen last week Dr. Flexner refused to say whether or not he had accepted the proffered leadership of what is one of the greatest institutes of modern science. Several of those who stand in close touch with university affairs expressed their opinion that the University would soon be looking for a new pathologist. On the resignation of Dr. John Guiteras from the chair of pathology, at the University, Dr. Flexner, who was then at Johns Hopkins, was selected by the Board of Trustees to fill the vacancy. He accepted the position and has since headed the pathological work at Pennsylvania. One of the foremost men in his profession, Dr. Flexner has been especially successful in his study of the problems of immunity. He was one of a board of three physicians appointed by the Government to investigate the bubonic plague on the Pacific coast. During the last year Dr. Flexner's work for the Rockefeller Institute for Medical Research has been along the line of experimentation with snake poison.—*Phila. Press.*

Nephropexy in a Case of Chronic Nephritis.—This case was reported by Dr. J. Norman Henry at the Philadelphia County Medical Society, February 11th. The patient was a laborer, aged twenty-four years. Two months before admission marked symptoms, as dyspnea, edema, disturbances of vision, etc., were noticed. On admission, examination of the eyes showed white patches of degeneration and punctate hemorrhages. The urine had a specific gravity of 1,009, the urea was one per cent., and there were present albumin, hyaline and granular casts, and red blood cells. Treatment was inefficient and operation was performed by Dr. Gibbon. The left kidney was large and very adherent to the fatty capsule. The right was less adherent. The capsules of both organs were stripped, though the autopsy apparently showed that this was not entire in the case of one of the organs. The operation lasted 55 minutes. Following this the urine was further reduced, albumin was present in large quantities and the patient suffered intense pain, finally dying on the eighth day. The kidneys together weighed but 320 grams. The case in brief was that of a young man suffering from chronic nephritis who died from severe pain and exhaustion and uremia following disturbance of the kidneys by operation.

The Irrigation Method as a Means of Aborting and Treating Acute Specific Urethritis.—Dr. Orville Horwitz reviewed the history of the irrigation method of treating acute urethritis and made an emphatic protest against its employment. The average practitioner of medicine has but little chance to observe large numbers of cases of urethritis, and the results that follow certain lines of treatment and must be guided to a large extent by the opinions and experience of specialists. Hence the evil results that may accrue from the advocacy of this method by some who are considered authorities on the subject. The abortive treatment of these cases is rarely possible because they are not seen in the incipient stages. The method never appealed to the speaker with favor on theoretical grounds. The organism is not reached and over distention of an inflamed organ is caused thereby. A thorough trial of the method, however, was given at the clinic of the Jefferson Hospital where about 715 acute cases are seen annually. A large number of cases were thus treated and the method finally abandoned as unsatisfactory and dangerous. Irrigation of the posterior urethra and bladder should be used only in cases of chronic urethritis and should then be performed by experts. The statement was made that practically no progress in the treatment of acute specific urethritis has been made during the past nine years. The prediction of a marked change in treatment within the next ten years was also made.

A Case of Bubonic Plague.—Dr. Judson Daland gave a brief clinical history and the autopsy findings upon a case of bubonic plague occurring in a native Hawaiian woman during 1902. There was gradually rising temperature and increasing abdominal distention. On the fourth day of the disease enlargement of the left inguinal glands was noticed, this increasing until death on the sixth day, the temperature having reached 108 degrees. Autopsy two hours afterward showed nothing of importance in the thoracic and abdominal cavities except the spleen which was four times its normal size. The temperature of the organ in its central part was 108 degrees. Smears from the enlarged gland showed great numbers of the plague bacilli. A rat caught in the house was thoroughly examined but nothing abnormal was found. The diagnosis in the case was made from the fever, adynamia, delirium, and enlarged lymphatic glands. This was proven when the characteristic bacilli were found in the glands, feces, blood, etc., of the patient. The prognosis is considered unfavorable by the physicians in the islands referred to when the organisms are found in the blood. Prognosis is comparatively more favorable when bacilli are found within the leukocytes contained in serum from the involved glands. Haffkine's serum was used in thousands of cases until seventeen deaths from tetanus occurred. This caused discontinuance of the serum before conclusive results were obtained.

Bacteriological Examination of the Blood.—At the meeting of the Pathological Society of Philadelphia held February 12, Dr. R. C. Rosenberger reviewed the more recent methods of conducting bacteriological examination of the blood and reported ten cases of various types of disease. The method used by him is Coplin's modification of that of Sittman. The lower part of the arm and the forearm are scrubbed with soap and water, followed by sterile water, and sixty per cent. alcohol. A sterile gauze dressing wet with hot 1 to 1,000 aqueous solution of corrosive sublimate is then applied for 24 hours. When this is removed at the time for examination, the parts are washed with alcohol and ether followed by sterile water or normal salt solution. The median vein is then made prominent, cut down upon and a large hypodermic needle or a trocar and canula inserted. As much as 20 c.c. of blood should be removed in some cases, certainly not less than 5 c.c. in any case. The blood is plated, inoculated into all culture media, and spreads are made. The blood is also inoculated into animals. Dr. Rosenberger's cases included two of scirrhous carcinoma, two of malignant endocarditis and one each of sarcoma of the ribs, enteric fever, thrombo-phlebitis, puerperal septicemia, salpingitis, and an obscure undiagnosed case. Bacteria were found in only four of these cases, the *Staphylococcus pyogenes albus* in the two cases of scirrhus, the sarcoma of ribs (after operation), and one case of malignant endocarditis.

CHICAGO.

Officers of the Chicago Ophthalmological and Otological Society.—At a recent meeting of this Society, Dr. Chas. H. Beard was elected President, and Dr. Brown Pusey reelected Secretary.

Resolutions on Child Labor.—The following resolutions were adopted by the Physicians' Club, at its recent meeting, and were recommended to the Chicago Medical Society for a similar disposition: Whereas, the employment of children in bread-winning occupations and the detention from school is inimical to the hygienic as well as to the moral welfare of the community; and Whereas, the effectiveness of statutes designed to regulate and control child labor is a matter of special interest to the medical profession, therefore, be it Resolved, that the Physicians' Club commends most heartily the effort inaugurated by the Industrial Committee of the Illinois Federation of Women's Clubs to secure such amendment of the existing statute in reference to child labor as will make it effective. Resolved, that the members of this Club use their influence collectively and individually to secure the passage of the child labor bill.

Influenza.—This disease is not taken seriously enough by the laity. While uncomplicated influenza is not usually a fatal malady, its malign influence in complicating or developing other diseases—especially consumption, pneumonia, Bright's disease and heart diseases—makes it one of the most dreaded by health officers. No case of influenza, however mild, should be neglected or treated lightly, when its infection is as widespread as it is at present. It should be neither fought off nor self-treated. The patient should put himself in the hands of his physician at once and follow instructions implicitly.

Bill for the Establishment of an Epileptic Colony.—A bill has been introduced in the General Assembly, providing for the creation and establishment of the Illinois State Colony for Epileptics; also a bill for the location, erection, organization and management of a State sanatorium for persons afflicted with tuberculosis.

Annual Report of the Secretary of the State Board of Health.—Dr. James A. Egan, Secretary of the State Board of Health, in his annual report, announces that with the exception of $1,200 a year paid to W. A. Shaw as an investigator, all of the payments to special attorneys made by the Board have come out of fines collected from violators of the law after prosecution by those attorneys. The practice of the Board is to allow its special attorneys as fees all money collected as fines in consequence of prosecutions by them, they paying all costs. Thus, the attorney for the Board in Chicago collected in fines from violators of the medical practice act, from June 1, 1901, to January 10, 1903, $6,210.83. Of this amount, he paid out in court costs, to investigators, agents to secure evidence, office rent, clerk hire, and other expenses, $3,997.28, leaving $2,213.55, which he was allowed to retain as fees.

Prevalence of Smallpox.—Smallpox has been found during the week in all quarters of the city, and in most of the cases the source of the contagion could not be traced. Dr. Spalding, Chief Medical Inspector, says: "The pest is attacking unvaccinated children under the school age of six years. Parents are careless about getting children vaccinated before they are compelled to do so, when they present them at school. There are five children in the Isolation Hospital under six years old."

Organization of a New School for Nurses.—A new school for nurses will be organized by the Presbyterian Hospital, with a three years' course. Lectures will be given to the nurses by members of the visiting staff of the hospital, and by the Faculty of Rush Medical College.

CANADA.

Campaign Against Tuberculosis in Montreal.—The executive committee recently appointed in Montreal in connection with the Montreal League for the Prevention of Tuberculosis, met last week and received the report of the Special Committee composed of Dr. A. J. Richer, Dr. J. G. Adami and Mr. C. M. Holt, who were appointed to lay out a plan of campaign. At this meeting Dr. Richer was appointed permanent Hon. Secretary of the League. Dr. Laberge, the Medical Health Officer of Montreal, has promised to recommend to the City Council that financial assistance be given the League. Briefly the report of the subcommittee outlined an educative plan of campaign, setting forth the dangers of tuberculosis and how these may be combated; and to afford assistance to those suffering from the disease. The distribution of literature will be undertaken and the Provincial Board of Health through Dr. Lachapelle has promised to cooperate with the League in this particular. A subcommittee was appointed to procure and prepare leaflets, to arrange to supply material and notices for the public press and the giving of popular lectures both in French and English and more particularly in the poorer districts of the city. A permanent working officer for the League will be appointed, a dispensary opened especially for cases of lung tuberculosis, a small home for incurable cases will be established, and a sanatorium or sanatoria established at an early date. To gain funds, members will be admitted at $1 per annum, and contributions will be solicited.

The New Medical Building of the Toronto Faculty of Medicine.—A deputation waited on the Premier of Ontario last week from the Medical Faculty of the University of Toronto to ask for a further grant of $50,000 to finish and equip the new medical buildings now nearing completion in the Queen's Park, Toronto. The original sum of $125,000 has been found inadequate and the Medical Faculty seeks to borrow another $50,000. This building when completed will be the finest type of modern college building on the North American continent. It has been constructed on the "Unit System," the standard size of the class-rooms being 23 by 30 feet. The lecture rooms are supplied by a number of "research" rooms in which students can carry on independent investigations. It is the first university building to be constructed on this unit principle since it was laid down. Toronto University now has the largest number of medical students of any Canadian university, even leading McGill, which for so many years took first place. There are at present 420 medical students on the rolls.

GENERAL.

Influenza in Italy.—Influenza is raging in Italy, especially in Padua, where 15,000 cases have recently been reported.

The Microbe of Hydrophobia.—At the last meeting of the Milan Medical Society, Prof. Somani of the University of Pavia announced that he had succeeded in isolating the bacterium of hydrophobia.

Cholera in Palestine.—There have been no new cases of cholera in Jaffa since December 27; though the disease is still epidemic in Nablous and in several of the small villages to the north of Jerusalem; the latter having, thus far, been spared the scourge.

The Plague in India.—From April 26 to October 4, 1902, 127,340 cases of plague, with 98,579 deaths were reported in India. In the province of Bombay alone there were, in one week, 10,861 cases and 7,903 deaths. The efforts of the English to make general the treatment by injections of antiplague serum have received a check through the unfortunate use of an inferior quality of serum, which caused more than 20 deaths in a village near Gujerat. Needless to say, the natives are more than ever opposed to the antiplague injections.

Subcutaneous Injection of Olive Oil.—Such injections with a specially-devised syringe are said to have been successfully used by Drs. Fornaca and Micheli of Turin, for the purpose of increasing nutrition and weight. From 50 to 200 gm. were injected, and a noticeable increase in weight and improvement in the general condition were seen in the five patients so treated; absorption of the oil being much more rapid when this method is used than when given by mouth.

Harvard's Medical School.—Treasurer Charles F. Adams, 2d, of Harvard University, says that work will begin soon on the proposed Harvard medical school buildings in the Back Bay Fens. The architects are completing the plans, several changes having been found necessary, since the project was first planned for.

The Rotch Memorial Hospital.—The Infants' Hospital, in memory of Thomas Morgan Rotch, Jr., of the class of 1901, to be erected in connection with the new Medical School buildings, is designed to be the most complete of its kind in the world. It will accommodate fifty patients, allowing for each bed an unusually large amount of room and air space. Within the hospital will be a memorial laboratory, equipped by gifts from members of the class of 1901, for the scientific study of infants' diseases.

For Original Research.—The Carnegie Institution has made five grants of money to Johns Hopkins University men for original researches. Four of these were announced by Dr. Ira Remsen this afternoon.

To Dr. Harmon N. Morse, professor of analytical chemistry, $1,500, to enable him to maintain during the coming year a competent assistant in his researches upon the new method which he has evolved for the measurement of osmotic pressures. Dr. Joseph C. W. Fraser will be named as the Carnegie assistant.

To Prof. R. W. Wood, whose researches in several departments of physical science have attracted attention, $1,000, to maintain a research assistant in his work. He has appointed Mr. Thomas Sidney Elston.

To Dr. H. C. Jones, one of the pioneers in the new physical chemistry as it is studied in America, $1,000, for an assistant in his researches. Frederick Hutton Gatman of Stamford, Conn., will receive the appointment. To Dr. J. J. Abel, professor of physiological chemistry, $1,000, for the purchase of apparatus necessary to his researches. It is reported from Washington that Dr. J. B. Whitehead, one of the associates of Prof. Ames in the physical department, has received a liberal grant to carry forward a piece of research of unusual interest.

Biochemisches Centralblatt.—The great strides made in medical chemistry and in those fields of medicine verging on chemistry necessitated the publication of a central organ. This is now published in Berlin by Carl Oppenheimer, under the direction of Ehrlich, Fischer, Kossel, Liebreich, Muller, Proskauer, Salkowski and Zuntz, and they have appointed Heinrich Stern, of New York, editor for the United States and Canada. The object of the publication will be: (*a*) To report such experiments and observations of physical and employed chemistry which are of importance to the physician; (*b*) Reports on the physiology of plants; (*c*) Physiological chemistry in the narrower sense (constituents of the body and their derivatives); (*d*) Chemistry of the tissues and organs under normal and pathological conditions; (*e*) Chemistry of digestion, secretions and excretions, metabolism and blood; (*f*) Ferments and fermentations, toxins of non-bacterial nature; (*g*) Chemistry of the pathogenic micro-organisms (toxins, antitoxins), phenomena of immunity; (*h*) Toxicology and pharmacology; (*i*) Hygienic chemistry, disinfection, examination of water. As this is the only international organ devoted to these scientific fields, American observers and investigators will find it to their interests to prepare abstracts of their papers which have appeared since Jan. 1 and will appear hereafter, and send them to Heinrich Stern, 56 East Seventy-sixth Street, New York City.

Hopkins Hospital Trustees Contract for New Surgical Building.—Plans for the new surgical building for Johns Hopkins Hospital have been finally approved and accepted by the board of trustees, and the contract for the work has been awarded to Mr. John Cowan. The cost will be about $125,000 and the work of construction will be commenced as early as possible. The new structure will be five stories high and the material brick and stone. It will be erected at the western end of the existing block of fine buildings fronting on Monument street and is intended to give ample accommodations for the increased general surgical work of the hospital. The basement floor, which is to contain the orthopedic department, will be left unfinished for a time. The first floor will contain reception and examination rooms, a large lecture room, class rooms and operating rooms for surgical dispensary and for accident cases. Other floors will contain preparation, treatment and recovery rooms for special work, class and lecture apartments, private and general operating rooms, lecture rooms for the medical department, reception and examining rooms, private and general photographic rooms and space for X-ray treatment for the medical department.

Obituary.—Dr. James M. Ridge died last week in Camden, N. J. He was seventy-six years of age, and was born in Bucks County, Penn. He was a graduate of the University of Pennsylvania, and was connected with the State Board of Health for several years.

Dr. Morrill Wyman, died at his home in Cambridge, Jan. 20, age ninety years, after a brief illness. He was the oldest medical practitioner in the State, having been continuously engaged for about sixty years. In the early part of his professional life he invented an instrument for removing fluids from the body especially the chest. By its use an operation, which was previously considered dangerous, and was often fatal, has been rendered effectual, safe, and almost painless. Dr. Wyman was graduated from Harvard in 1833 and from the Medical School four years later. In 1853 he became Adjunct Professor of the Theory and Practice of Medicine at Harvard College, but relinquished the chair after three years' occupation. He had membership in many professional bodies, and his writings on medical subjects were of wide range and considered to be authoritative. He had been an overseer of Harvard since 1875 and was given a degree of Doctor of Laws in 1885.

Dr. Herman Mynter, who assisted in the chief operation on President McKinley, died Feb. 9, at his home in Buffalo. He was born in Denmark 53 years ago. He was remarkable for his skill at surgery and his bluntness with patients.

Dr. Franklin A. Gardner, one of the leading physicians of Washington, who was White House physician during the Administration of President Harrison and who attended James G. Blaine and Thomas B. Reed, died at his home on Friday night of typhoid fever. Dr. Gardner, who was only forty-five years old, was born in Salem, Mass., and was educated in the school there.

Dr. Rush Winslow died last week at Appleton, Wis. He was the eldest son of the late Dr. Joseph Winslow and was born Nov. 7, 1843, at Koshkonong, Wis., receiving his elementary education at the schools of Fort Atkinson and as soon as of the proper age he entered his father's office for the study of medicine. In 1867, he commenced a course at Rush Medical College, Chicago, where he graduated in 1869. In 1870, he entered Bellevue Hospital Medical College, New York, where in 1871 he received his degree of M.D. For two years thereafter Dr. Winslow practised at Fort Atkinson, removing then to Appleton, Wis., where he has since been in the active practice of medicine and where he has proved a useful, active citizen, standing in the front rank of the men who have made the city what it is.

CORRESPONDENCE.

TRANSACTIONS OF FOREIGN SOCIETIES.

British.

RHEUMATIC ARTHRITIS AND OTHER ALLIED GOUT AFFECTIONS—THE PATHOLOGICAL ASPECT OF RECENT WORK UPON THE PANCREAS—A CONTRIBUTION TO THE NATURAL HISTORY OF DYSMENORRHEA.

J. Dreschfeld, at the Manchester Medical Society, Dec. 3, 1902, opened a discussion on Rheumatic Arthritis and Other Allied Rheumatic Joint Affections and Their Treatment. He pointed out that the subject naturally divided itself into acute and chronic joint affections. Of the acute variety, the first place was occupied by acute rheumatic arthritis. Recent observations have thrown considerable light on the etiology of this affection, though a good deal still remained obscure. Most pathologists and clinicians were now agreed that it was an infectious disease, but the question whether it was due to a pathogenic micro-organism, which only under certain hereditary or predisposing conditions became active, was still a disputed point. Recent observers had looked upon the tonsils as the portals of entrance of the micro-organism causing acute rheumatic arthritis, and the observations of E. Meyer, Wassermann and more recently of Paine and Poynton and Menzer had shown the presence of a streptococcus in the form of a diplococcus in the tonsils of patients affected with acute rheumatic arthritis, which could be cultivated, and when injected into rabbits, produced lesions such as they saw in rheumatic fever. As yet, however, one could not look upon these diplococci as the pathogenic organism of acute articular rheumatism as pointed out by Menzier, for other micro-organisms had produced the same result. The diplococci described by the various observers showed marked morphological differences, and diplococci found in the healthy tonsils and in the tonsils affected with angina and other affections had occasionally, when injected into animals, produced similar lesions, though it must be observed that Widal and Besançon in a very large series of experiments obtained mostly negative results. It must further be observed that in some cases the injection of the streptococci obtained from the tonsils produced at times septic and at other times pyemic lesions. It would appear from these exceptional data that though the exciting cause in acute rheumatic arthritis was a micro-organism, special constitutional predisposition or some accidental causes (exposure to cold, to damp, etc.) played a prominent part in the causation of acute rheumatic arthritis, and favored the entrance of the micro-organism into the blood. The importance of these secondary causes should not be overlooked. The experimental research on this subject had further shown that acute rheumatic arthritis, septic arthritis and pyemic or suppurative arthritis were more closely related than was at one time supposed, and supported the clinical evidence, such, for example, as was shown in the relationship between a rheumatic or papillary endocarditis and septic endocarditis. The treatment of acute rheumatic arthritis offered little scope for discussion. The salts of salicylic acid were given; they reduced the temperature, relieved the pain, caused a diminution in the swelling, and were said to increase the elimination of uric acid, but they did not shorten the duration of the disease, and did not prevent collapses, and unless alkalies in very large doses were given also, endocarditis often occurred. Local treatment was essential. One form of acute arthritis was especially alluded to in which often the wrist and the ankle became affected and in which besides excessive pain there were a good deal of inflammatory subcutaneous edema and inflammation of the sheaths of tendons. The disease was very obstinate to treatment and often left the joint anchylosed. Davies-Colley described this affection occurring in women afflicted with leucorrhea. It was a septic arthritis, often due to gonorrhea, but was sometimes found independent of gonorrhea; in some rare cases most of the joints might become involved. Acute osteo-arthritis was no doubt a rare affection, but occasionally cases in which there were pyrexia, profuse and acid perspiration, swelling and pain in the joints, were seen, and in which the joints, instead of returning to normal condition, showed the appearance seen in osteo-arthritis. In the present state of their knowledge, it was impossible to say whether there was a double infection or whether the disease was primarily one of osteo-arthritis. The infective arthritis of fevers was next dealt with. Pneumonia, typhoid fever, scarlet fever, diphtheria, smallpox, influenza and cerebrospinal meningitis, were sometimes accompanied or followed by an acute swelling and pain of one or more joints. The physician had to deal here with various affections: (1) A toxic affection, due to a toxin. Some doubted the existence of a toxic arthritis, but that such an affection existed was shown by the arthritis sometimes following very soon after the injection of antitoxin serum in diphtheria; (2) an arthritis due to the pathogenic micro-organisms, as in the case of pneumococcal arthritis, described by Cave and Nathan Raw and in some of the reported cases of arthritis in typhoid fever; (3) a mixed infection—the effusion into the joint, which might be serous or purulent (pyemic) containing septic micro-organisms; (4) true rheumatic arthritis as a complication of the primary infective fever. Occasionally, as in typhoid fever, the vertebral column might be affected (typhoid spine) characterized by excessive pain and stiffness of the vertebral column, this, again, being sometimes a nervous affection and at other times a purely toxic affection; at other times there were distinct ostitis and periostitis. Gonorrheal arthritis in its various types was alluded to. Occasionally the vertebral column was also affected. Dr. Dreschfeld next considered chronic affections, first describing chronic rheumatic arthritis. In most persons who had had chronic rheumatic arthritis the joints again assumed their normal appearance; occasionally, however, the smaller joints formed a spindle-shaped swelling and remained so permanently; in a few cases with a marked family history of rheumatism the symptoms of rheumatic arthritis came on slowly and insidiously, the joints became stiff and painful, the muscles in the neighborhood of the joints underwent atrophy, marked deformities of the hands and feet ensued, and the patient might become quite crippled. The distinction in such a case between rheumatic arthritis and rheumatoid arthritis was almost impossible. Such differences as had been pointed out by some observers were scarcely enough to differentiate them. He then referred to chronic rheumatoid or osteo-arthritis: a chronic disease in which one or more joints were affected, with marked changes in the cartilage and bones of an atrophic or hypoplastic character and atrophy of muscles, and resulting in marked deformity of the joint. Various affections had been classified under this head: (1) Heberden nodules. It was very doubtful whether this was osteo-arthritis. In some cases the affection was true gout, in others the lesion was a trophic one, due to overstrain and a general debilitated state of the system. Still described two cases in children who had congenital syphilis; (2) the general, progressive osteo-arthritis. Most would agree with Garrod that more than one affection was included in this group. The older observations of Wohlmann, Baumtgen and Baxall and the case described by Still pointed to its infectious nature; the more recent ones of Cave showed that often it was of a septic nature, the infective agent reaching the system through the alimentary canal; (3) arthritis deformans of monarticular arthritis. This, probably, was also microbic in origin in which, however, trauma and a debilitated condition played an important part. The various forms of spondylitis deformans, and their relation to osteo-arthritis, gonorrheal arthritis, and affections of the meninges were alluded to. In conclusion, Dr. Dreschfeld dealt with the treatment of chronic rheumatoid arthritis.

E. H. STARLING and W. M. BAYLISS, at the Pathological Society of London, Dec. 16, 1902, read a paper on the Pathological Aspect of Recent Work upon the Pancreas. They found that introduction of acid into the upper part of the small intestine produced a flow of pancreatic juice. They then completely isolated a portion of the jejunum from all its connections with nerves, and again introduced acid into the isolated gut and a flow of pancreatic juice was again produced. They thereafter thought it probable that the secretion of the pancreas was promoted, not by a reflex stimulation, but by a direct chemical effect through the blood. The next step was, therefore, to scrape the epithelium from the jejunum, pound it up with acid, and inject it into the veins of an animal; the result of such an injection was at once to produce a large flow of pancreatic juice. The subject capable of producing this result they called "secretin," but they had not yet been able to isolate it. Secretin was identical in the frog, birds and mammals, and when injected always produced a flow of pancreatic juice. The normal function of the pancreas thus depended upon the entrance of acid into the duodenum and the consequent production of secretin in the mucous membrane of the small intestine. By injecting secretin into a vein, a flow of pancreatic juice had been readily obtained. Three ferments were present in the pancreatic juice, one which acted on proteids, one on carbohydrates, and one on fats. The juice collected from a fistula had a strong action of carbohydrates, a strong action on fats, but a very weak action on proteids. If, however, the juice was allowed to flow over the mucous membrane of the intestine its action on proteids was greatly increased. When pancreatic juice was collected from the duct it had practically no tryptic properties, but when added to the scraped mucous membrane of the intestines it became powerfully tryptic. The pancreatic juice thus contained trypsinogen and needed only a body present in the succus entericus, to which the name "enterokinase" had been given to produce the tryptic ferment. They next dealt with the mechanism of the gastric and duodenal digestion. They mentioned

Pawlow's observation that the pylorus remained contracted so long as the material in the duodenum was acid, and only relaxed when it became alkaline and thus allowed a fresh quantity of acid chyme to pass. They then showed that the injection of secretin in a dog produced immense congestion of the intestine. This might be due either to the direct effect of the secretin or it might be the effect of the pancreatic juice, acting on the intestine in which the acid juice was absent. By experiment on a dog they showed that this action was due to the pancreatic juice and not to the direct action of secretin. As long as the pancreatic juice remained in the ducts, it had no action, since there were no carbohydrates and very little fat on which it could act, and the tryptic ferment was inactive without the enterokinase. They suggested that the regurgitation of the succus entericus (which contained the enterokinase) into the pancreatic ducts would produce tryptic ferments and thus cause an acute pancreatitis. The effect of secretin had been tried in diabetes, but without success.

G. E. HERMAN and H. R. ANDREWS, at the Obstetrical Society of London, Dec. 3, 1902, communicated a paper entitled "A Contribution to the Natural History of Dysmenorrhea" in which they compared a number of cases of dysmenorrhea cured by dilatation of the cervix with a number of others in which that process produced no benefit. They found no reason to think that dysmenorrhea, curable by dilatation, was associated with imperfect development of the uterus, believing that it began with the establishment of menstruation in two-thirds of the cases, and was acquired later in about one-third; that it almost always began before the age of twenty-five, but might be acquired at any age. The result of treatment they considered not to be materially affected by the length of time the dysmenorrhea had lasted, the age of patient when treated or the duration of her married life. They found that in most cases cured by dilatation the time of commencement of pain was very near the time of commencement of the flow, while in most of the cases not cured by dilatation, the pain began two days or more before the flow. In half of those cured by dilatation the pain was over in less than two days. In half of those not cured by dilatation, the pain lasted more than four days. In four-fifths of those cured by dilatation, the pain was paroxysmal; in three-fourths of those not cured by dilatation, it was constant. In most of the cases cured by dilatation the pain was not relieved by lying down. Dr. Herman and Dr. Andrews gave details showing the severity of the pain, and found that only a few patients were known to pass membranes, and that in only a few were there physical signs of disease. They found no evidences of such narrowing of the cervical canal as to hinder mechanically the flow of blood through it, but thought it possible that some degree of smallness and rigidity of the canal might hinder the physiological dilatation of the canal which should take place during menstruation, and so provoke painful contractions of the uterine body; but they were unable to adduce evidence of this.

SOCIETY PROCEEDINGS.

MEDICAL AND CHIRURGICAL FACULTY OF MARYLAND.

SECTION OF CLINICAL MEDICINE AND SURGERY.

December 19, 1902.

Combined Intra- and Extraperitoneal Method of Removing Ureteral Calculi.—Dr. Martin remarked that in 1884 Henry Morris, of London, said the possibility of removing an impacted ureteral calculi depended on its situation; that the most common site for the calculus was either near the pelvis of the kidney or near the bladder; that the calculi in the intermediate portion of the ureter were beyond reach of the surgeon.

The present case is one of complete impaction in the intermediate portion of the ureter where it crosses the brim of the pelvis. The patient was taken ill on November 20, 1901, and was thought to have appendicitis. Later on his physician made a diagnosis of renal colic and was unable to relieve his excruciating pain, even with two grains of morphine. He was quieted with chloroform. There was no rigidity or marked tenderness in spite of the severe pain. The temperature and pulse were normal. The paroxysms of intermittent pain and vomiting lasted for over twenty-four hours. No X-ray could be obtained. The incision was made through the right rectus and the stone was easily localized at the brim of the pelvis. It was tightly impacted, lying crosswise in the ureter. A skin incision was made along Poupart's ligament as high up as the anterior spine, the peritoneum was stripped back and the ureter was opened extraperitoneally. When the calculus was removed there was a gush of urine. The abdominal wound was closed and healed per primum. A drain was left in the inguinal wound but there was no leakage.

In spite of Cabot's recommendation of Israel's incision, it seems to me that the intra- and extraperitoneal method is better, for it avoids working in the dark.

Subclavian Aneurism.—Dr. Robins' patient denies syphilis, but has suspicious scars on his body; he has paroxysmal attacks of dyspnea, but no dysphagia. There is a fulness and pulsation above and below the left clavicle. There is a double murmur at the apex and at the aortic area, as well as over the pulsating area described. The heart is not enlarged. There is no Corrigan's pulse. External to the sternomastoid muscle on the left there is a thrill. The radial pulses are unequal. The patient is hoarse and has a brassy cough, but there is no abductor paralysis of the left vocal cord.

The second patient is a male of fifty-seven years, admitted to Bay View Hospital with a diagnosis of pernicious anemia for which he had been treated in another hospital. On admission the patient had a neuritis, which may be easily accounted for by the arsenical medication previously given him. His skin, formerly of a light complexion, became jaundiced before admission to the hospital, but cleared up later and now presents a striking bronzed color. He has nephritis and an irritable bladder. The teeth are bad. The pulse is variable and the patient is very weak. Since admission the neuritis has been disappearing and the complexion growing darker. The blood examination showed 4,500,000 red corpuscles; 11,200 leucocytes, with a normal differential count, no nucleated reds, or poikilocytosis; hemoglobin 85 per cent. Examination of gastric contents negative. The tuberculin reaction was very positive, the temperature rising above 103° F. For this rising, as well as on account of the pigmentation of the skin and the extreme weakness, the previous diagnosis has been changed to that of Addison's disease.

Dr. Beck said the diagnosis of pernicious anemia, made at the City Hospital, was based on the blood count which showed 1,500,000 red corpuscles. The patient was very pale, but well nourished, and was rapidly improved by arsenic. He had paresthesia, exaggerated and later loss, of reflexes, the nervous symptoms being evidently due to degeneration following faulty nutrition in the lower part of the cord.

Dr. Pleasants remarked that the patient was slightly jaundiced on admission to the City Hospital, and had later grown very pale. The bronzing of the skin now present might be due to the use of arsenic.

Multiple Exostoses.—Dr. Wholey remarked that exostoses are really osteomata appearing on the surface of the bones and involving a limited area. They may be either osteoma durum, spongiosum, or myelosum. Their tendency to be located at the insertion of muscles gave rise to the idea that they were bone spines turned outward. They occur generally during the period of rapid growth, but are found at all ages, even in the intra-uterine fetus. Multiple exostoses usually occur in girls between the ages of three and four years. The etiology is obscure. Tillman has emphasized hereditary influences. They are usually spongy growths and are found near the centers of ossification. The vertebræ are rarely affected. On the skull a few flat elevations may occur and on the scapula they may assume a pedunculated form. When on the extremities those on the upper limbs point downward and those on the lower limbs upward, as a rule.

The present case is a Russian girl of nineteen years, a needle-worker, who came to the Johns Hopkins Dispensary on August 23, 1902, complaining of pain in the chest and nervous indigestion. Her family history is unimportant. She is subject to nightmare. The patient called attention herself to the lumps on her fingers which were distributed as follows: Right hand; index finger, two; middle finger, one; ring finger, two. Left hand, index finger, two; middle finger, one; ring finger, one. On each humerus at the inner surface of the upper extremities; on the right clavicle, three at the inner end and two at the outer; on the left clavicle, two at each end. A similar symmetry exists in the bones of the lower extremities, the exostoses occurring at the lower end of both femurs, at the upper end of the tibia. The growths measure 1 x 0.5 cm., and all occur on the extremities with the exception of a few on the ribs. They occur on the dorsal aspect of the fingers in each case. The symmetrical arrangement is evident from the distribution. The lower end of the femur was greatly hypertrophied and a small spicule of bone projects upward on its inner side. The upper end of the tibia was rough and surrounded by several protuberances. A full discussion of the subject will be found in Schuchardt's monograph in the *Deutsche Chirurgie*, Vol. 28.

Dr. Ruhräh remarked that in a recent case described by Cannois and Roy (*Nouvelle Iconographie de la Salpêtriere*, 1902) there was malnutrition of the bones with spontaneous amputation of some of the phalanges. There was also a loss of temperature sense. The writers emphasize hereditary influence. The grandmother, in their case, had had exostoses and tuberculosis; all her children had both, the second son, in turn having ten children, each of whom had exostoses. They conclude (*a*) that the pathogenesis is not known, (*b*) the affection is probably due to the disease of the gray matter of the cord, (*c*) it often occurs in association with tuberculosis.

Dr. Baer reported two cases, one in a male of thirty-five years, who had considerable atrophy of the bones, the radius and ulna being bent in the middle. The other, a male of ten years, who had multiple exostoses on all the long bones, especially at the epiphyses. Symmetrical arrangement was striking in the latter case.

Pathological Specimens from Two Cases of Aneurism.—Dr. Hirsch exhibited the first specimen, a male of sixty-four years, who was examined in 1878 and had a diagnosis of aneurism made at that time. He had had syphilis and had been struck in the chest by a beam some time before the condition was recognized. Whitman (*Lancet*, 1902) reports a case which was known to have lasted 16 years, but no case has been found in the literature which is known to have lasted so long as the present one, *i.e.*, twenty-four years. The aneurism was found at autopsy to be the size of a cocoanut and was largely filled with a lamellated clot. It projected forward and completely perforated the sternum, the manubrium being at right angles to the gladiolus. During his stay in the University Hospital the patient had a severe attack of influenza.

The second specimen is that of an aneurism of the transverse arch, extending posteriorly and accompanied by aortic insufficiency.

Two Successful Cases of Rectopexy.—Dr. Earle illustrated by drawings the operation he had done in two cases, following the method described by Tuttle. He stated that aggravated cases of prolapse of the rectum were considered hopeless a few years ago. If the mucosa alone was prolapsed, Whitehead's operation could be done, but for prolapse of the entire rectum rectopexy was necessary. Dr. Fowler, of Brooklyn, first performed the operation.

Dr. Earle's first case was a woman who had been troubled for six or eight years with the prolapse projecting two inches. The second case was a male of fifty years, who had been troubled from boyhood, the prolapse extending six inches, preventing the patient from active work.

THE JOHNS HOPKINS HOSPITAL MEDICAL SOCIETY.

December 1 and 15, 1902.

Scrofuloderma.—Dr. Gilchrist showed a case of this disease, the patient being a colored girl who came to the hospital one month previously with lesions all over her body. Six months ago a number of deep-seated hard lumps appeared on the body suddenly. Some broke down forming subcutaneous abscesses which increased in size and continued hard. The growths are movable over the muscles. The smallest measures two to three cm. across. In addition there was a brown induration on the left high 8 cm. across. On the left forearm and on the body and legs there were irregular pigmented scars. There were thus three types of lesions: (1) deep-seated nodules; (2) subcutaneous abscesses; (3) scars. The tumors are not tender as are the abscesses, some of which have become superficially ulcerated. The patient gives no former history of tuberculosis nor has she been exposed to tuberculous contagion. The diagnosis evidently lies between some rare form of tuberculosis and syphilis. There is no history of gumma nor any definite evidence of syphilis. The glands are enlarged as is frequently the case among negroes.

A guinea-pig inoculated with pus taken from the subcutaneous abscesses died on the twentieth day. Its peritoneum was filled with granulations, the mesenteric glands were caseous and the liver showed fatty degeneration. In the inguinal glands and in scrapings from the peritoneum tubercle bacilli were found. The patient gave a positive tuberculin reaction. The case therefore clears up one of the groups of skin tuberculosis. The usually recognized forms are (1) Lupus vulgaris; (2) tuberculosis cutis, usually due to auto-inoculation; (3) tuberculosis verrucosa cutis, often seen in autopsy rooms; (4) lichen scrofulosorum, in which papules are seen around the hair follicles, clearing in the centers; (5) erythema induratum scrofuleux, most frequently described by French writers. In the typical form hard patches appear, especially on the legs with a tendency to break down and form punched out ulcers. There may be a history of tuberculosis but no other focus is found in the body; (6) erythema elevatum diutinum.

The present case belongs in the fifth group and serves to prove that lesions of this type are tuberculous. The old name, scrofuloderma, is not strictly applicable.

Blastomycetic Dermatitis.—Dr. Gilchrist showed a patient, a colored male, who five years ago noticed a small pimple on the abdomen. One month later a similar pimple appeared on the back. The tops of these pimples were rubbed off and pus exuded. The lesion spread and became ulcerative without any tendency to heal. Other lesions appeared, one near the right nipple and one in the right groin. They at first looked like subcutaneous abscesses the size of an egg and broke down and discharged sero-pus.

The lesion is papillomatous, most typical along the edges which are abruptly sloping. On pressure pus exudes from miliary abscesses situated between the papinæ. The pus contains budding blastomycetes which are pathogenic to animals, especially to dogs causing pseudotuberculosis of the lungs. The lesion is painless. Microscopical sections show hypertrophy of the epidermis, miliary abscesses containing blastomycetes, pseudotuberculosis of the corium with masses of plasma cells.

Thirty-four cases of the affection have been reported, the majority of them by four or five writers in Chicago, the chief of these being Hyde and Montgomery. The culture looks like a mold and at the end of a week looks like a fine white mouse. It is very adherent to the medium. Many cases of tuberculosis of the skin have been mistaken for this disease. It may, however, be differentiated from tuberculosis (*a*) by its papillomatous nature with abscess formation between the papillæ; (*b*) by the presence of the organisms which are 12 to 15 in diameter. In the present case the glands are involved which is quite unusual. At the suggestion of Bevan, KI has been tried in this case and acted like a specific. The patient was treated here a year ago and left the hospital markedly improved. He refused to stay until the lesion had been entirely healed.

Uncinariasis in Man.—Dr. Thomas Boggs showed a male, twenty-two years old, from North Carolina, a farmer and teacher by occupation, who came here complaining of general weakness. One brother died three years ago with the diagnosis of pernicious anemia. Many of the inhabitants in that section of North Carolina are anemic. The patient has been anemic for years, being always much run down after the winter's teaching. He uses tobacco freely. In the spring of 1902 the patient had influenza, and after that was troubled with diarrhea, passing some mucus but no blood. There was occasional nausea and vomiting. During the past year he has lost much in weight and strength. Since admission the patient has had an irregular temperature, running as high as 102° F., but without chills or sweats. He has had two stools daily. He is moderately nourished, very anemic, but shows no patches of pigment nor is his skin of a waxy color. There is a soft systolic murmur at base of heart. The stools contain a larger number of the eggs of *Uncinaria americana.* The adult worm is 12 to 18 mm. in length, the female being somewhat larger. The head is re-curved and is armed with chitinous teeth which wound the duodenum. It passes from place to place in the bowel and each wound continues to bleed for a long time, so that there is a greater loss of blood after the bite than during the sucking of the worm. Thirteen cases were found in the Washington Insane Asylum, one having lasted six years. The ova have to be differentiated only from those of the oxyuris which are asymmetrical and flat. The egg of a lumbricoid is thick, shallow and easy to distinguish.

Dr. Thayer remarked that this was the second case seen in Baltimore, one having been described post-mortem by Dr. Yates (*Johns Hopkins Hospital Bulletin*, 1901). It is strange that we have been so slow in recognizing uncinariasis for strongyloid worms are comparatively frequent and the two may occur together. The eggs alone of the uncinaria appear in stools while only the living embryos of the strongyloids appear there, the two kinds of eggs being very similar but hatching very differently. Of the four cases of strongyloids seen in this hospital, three came from Maryland and one from Virginia. Uncinariasis, which is the more serious of the two diseases, is readily treated with male fern or thymol. Strongyloids, however, are hard to expel but they may cause no serious symptoms.

Dr. Futcher said since the publication of Dr. Stiles's pamphlet on Uncinariasis he has been studying the disease in the south and has seen many additional cases. He proves these parasites to be the commonest cause of severe anemia in the south, more common even than malarial anemia. In one of Dr. Herrick's cases the eosinophiles numbered 26 per cent.

Arteritis and Arterial Thrombosis in Typhoid Fever.—Dr. Thayer said that these complications have long been recognized in France. The first case is that of a male, twenty-two years old, of strong constitution, who on the ninth day of his illness had general convulsions and became unconscious. After the convulsions he was clear. After four hours the convulsions recurred and continued at intervals for six hours. The convulsions were more marked on the right and there was conjugate deviation of the eye up and to the left. At the autopsy hemorrhage enteritis was found. Pure cultures of *Bacillus typhosus* were obtained. There was thrombosis of the temporal and parietal branches of the middle cerebral artery and meningitis and arteritis in the region of the occluded vessels. The arteritis was evidently primary, and the thrombosis was probably agglutinative, as has been described by Flexner.

The second case was that of a female, sixteen years old, who was admitted to the hospital on June 16, 1902, on the fifth day of her illness. She was delirious from the onset. On the eighth day there was consolidation at the left apex and on the eleventh day at the right apex. On the fourteenth day she became better, but it was noticed that the right foot and leg up to the knee were quite cold after the tub bath. There was no swelling. Two hours later purplish mottling appeared in these parts and arterial pulsations were not felt below the knee. The leg and thigh were greatly swollen and an irregular line of demarcation could be made out between the healthy and gangrenous tissue. The patient died on the twenty-second day, after delirium. The heart sounds were clear. No pulse could be felt below the middle thigh.

The third case is that of a male, eighteen years old, admitted on the third day of his illness. On the fourteenth day he had pain on the inner side of his left thigh and the region was found to be tender but no cord-like feeling could be made out in the saphenous vein. Two days later the left leg became swollen and the foot was cold, pulsation having ceased. Tenderness developed along the vessels. The symptoms gradually improved until the forty-ninth day, when the tenderness recurred and the pulsation of the tibial vessels could be partly felt. There was edema of the ankles. On the seventy-ninth day the patient left the hospital well.

The fourth case is that of a female, twenty-seven years old, a teacher, admitted on the thirteenth day of her illness. On the twentieth day she had a hemorrhage from the bowels, pain at the bend of the left elbow with swelling and tenderness over the brachial artery. The left hand became cold. Gradually, however, the patient improved.

The fifth case is that of a male, eight years old, seen in the fifth week of his illness by Dr. Walter Stiner of Hartford, who has kindly given me the notes of the case. The patient had pain in the fingers of his right hand, radiating up the arm. The brachial artery was tender, pulseless and cord-like. Dr. Janeway saw the case and expected gangrene to occur. The patient, however, recovered.

Gangrene of the extremities in typhoid fever was first noticed in 1806. In 1859 it was suggested that it might be due to changes in the blood-vessels and in 1863 it was shown that tenderness preceded the thrombosis. Probably arteritis precedes the thrombosis in every case, and causes it, although there may be post-thrombotic changes in the vessels themselves. This view is confirmed by the literature of the past forty years. To account for the healing which has followed the condition of pulselessness in some of the cases, it is suggested that the pulse was merely not felt. As to the cause of the arterial changes we suppose that infection is localized in the artery walls as in the case of veins. The relation of the arteritis to the thrombosis is not always the same. In one of the cases here reported the thrombosis was evidently agglutinative and may have caused the arteritis.

To sum up, typhoid arteritis presents a well-recognized symptom complex, occurring late in the disease. There are pain and tenderness along the large arteries, especially of the leg. The vessels are pulseless and the part quite cyanotic. The outcome is either a true gangrene or complete recovery. An acute arteritis may be the cause of obscure cases of aphasia and paralysis.

Perforation of the Colon; Operation; Recovery.—Dr. T. S. Cullen presented this patient, a colored servant-girl, complained of pain at 7:30 one evening and was seen by the family physician at 9 o'clock and given morphine. Blood examination showed a leucocytosis but no excess of eosinophiles. At 11 P.M. the patient was in fairly good condition and operation was decided upon, a diagnosis of early appendicitis having been made. On opening the abdomen at 1:30 A.M. the pelvis was found full of pus but without evidence of appendicitis. The ileo-cecal valve was perfect, the cecum was obliterated and just distal to it the caliber of the colon was reduced in size to that of a small bird shot. Such a shot was actually found occupying the lumen and practically obliterated it. Just distal to this a perforation was found in the ascending colon. Eight inches of colon were resected, including the perforation and the point of narrowing. The patient is doing well. Histological study shows that the constriction was due to tuberculosis.

Adenomyomata of the Uterus.—Dr. Cullen showed a number of lantern slides demonstrating the origin of the glandular tissue in adenomyomata. V. Recklinghausen proved that the glandular tissue originated in the remains of the Wolffian duct. The lantern slides made it clear, however, that it had its origin in the glands of the uterine mucosa.

A study of the nineteen cases which have occurred in this hospital made it possible to trace the connection between the glands and the adenomyomatous tissue.

December 15, 1902.

Exhibition of Cases Illustrating Renal and Ureteral Surgery.—Dr. H. H. Young exhibited the first patient, a male of twenty-nine years, who has had pain in the bladder and kidney since the age of two. Every two or three weeks he has had sharp attacks of pain radiating to the penis. When seen on August 28, 1901, his urine showed no shreds or pus but a week later, after an attack of pain, red corpuscles were present. The cystoscope showed the right ureter and bladder to be normal. The orifice of the left ureter was contracted and around it was a ring protruding into the bladder and bulging above it. The right ureter could be easily catheterized. On the left side the catheter entered only about one cm. and then met an impassable obstruction. No urine could be obtained from this side. The diagnosis was made of stone in the lower part of the ureter with stricture and the X-ray confirmed the diagnosis.

The operative incision corresponded to the lower two-thirds of Israel's incision. The ureter was found by palpation through the peritoneum and was dilated to a diameter of one inch. It had so grown into the peritoneum as to be almost intraperitoneal. A stone 1.5 cm. in diameter was removed with difficulty from the last portion of the ureter. No other stones could be felt by the searcher. Not even the finest probe could be introduced into the bladder through the ureteral orifice and an incision was accordingly made into the bladder dividing the stricture. The wound was drained but there was no leakage. The patient is now in good health.

The second patient, a male of twenty-five years, who five years ago had an attack of colic in the region of the right kidney and at intervals of a week had two further attacks, each lasting several hours. No pus, or blood or fragments of calculus were present. Two years ago the attacks began again and occurred monthly, the pain being felt in the bladder and testicle and radiating upward toward the kidney. In March, 1901, a small calculus was passed and the patient was relieved for six months, but the attacks recurred in September, 1901. During the last two years the pain has always commenced in the testicle and radiated thence to the bladder and kidney. On examination the patient's urine showed a few shreds containing pus cells. The cystoscope showed the bladder and both ureteral orifices to be normal. The catheter entered the left ureter to a distance of 4 cm. and then met with a tight obstruction. Clear urine was passed freely through the catheter. The right ureter was found to be functionating correctly. The X-ray showed a calculus on the left side.

The abdomen was entered, as before, and the ureter again found to be practically intraperitoneal and surrounded by dense adhesions. Four centimeters from the bladder a small calculus was found. A bougie showed that there was a stricture below this and this was dilated. Drainage was used and again found unnecessary.

The third patient, a male of twenty-one years, from Texas, who was first seen on October 17, 1902. He had not had typhoid. At the age of four years he noted a pain in his left side which was associated with intermittent swelling. From his fifth to his tenth year he had monthly attacks of pain but passed no calculus. The pain was in the region of the left kidney and, did not radiate. When ten years old the bladder became irritable and there was frequent micturition but no other bladder trouble. Between the age of twelve and seventeen the pain and swelling on the left continued. In 1897 the patient had dysentery and later an abscess in the left side which was opened. The fistula remained and was thought to come from a lumbar abscess. No urine escaped from it. Two years ago the patient was operated on with a diagnosis of necrosis of the ribs, but no such condition was found. On examination a fistula was found below the twelfth rib into which a probe passed three or four inches. The cystoscope showed that the right half of the bladder and ureter were normal. On the left side the ureteral orifice was abnormal. There was atrophy of the trigonum and the orifice of the ureter did not contract. A diagnosis of obstruction of the left ureter was made and the X-ray showed five stones in the region of the left kidney. At the operation the kidney was found surrounded by dense fibrous adhesions and within it were five calculi. The twelfth rib had to be excised to remove it.

The fourth patient, a male of thirty-five years, who came complaining of pain in the left side and his back, in September, 1902. This pain was first noticed three years ago and radiated to the bladder and penis. The attacks were dull at first, then very severe, lasting 15 minutes. They occurred twice a week but no calculi nor blood were passed. The last attack was two hours long. There had been fever and night sweats, but no other evidence of tuberculosis. On examination the patient was found to be tender in the region of the right kidney; the urine contained blood and pus. The cystoscope showed the right ureter and the bladder to be normal. The left ureteral orifice was surrounded by four or five polypoid growths and there was a purulent ooze from the orifice. The right ureter was catheterized and found normal, but the catheter would not enter the left ureter. The X-ray showed no calculus. At the operation the ureter was found to be thickened, the kidney lobulated and contained miliary tubercles at its lower end. There were miliary tubercles found in the pelvis of the kidney and ureter. The patient did well after the operation but still has two fistulas which, however, are closing rapidly.

The features of the case are (1) the similarity of the attacks, lasting five years, to attacks due to calculus; (2) the absence of evidence of tuberculosis beyond night sweats; (3) the resemblance of the cystoscopic picture to that seen in calculus.

The fifth patient, a male of forty-four years, who came complaining of an enlarged spleen. In 1893 he had a severe attack of typhoid with orchitis one month after the attack. Convalescence was slow. One year later there was pain in the back and irritabliity of the bladder. The urine, at that time, was ropy and mucous. In 1897 pain was again felt in the region of the left kidney and has continued since. There have been headache, nausea, vomiting and loss of weight. One doctor after another treated the patient unsuccessfully and while leaning on the railing of the boardwalk at Atlantic City, before coming to me in May, 1901, the patient felt a swelling in the abdomen. His wife made a diagnosis of an enlarged kidney but the patient felt sure it was a tumor of the spleen. On examination the inner edge of the kidney was found to reach the mid-line, the lower edge reaching Poupart's ligament. The urine was full of pus. The operation was done under cocaine. Calculi were removed from the large kidney and a drain was left in. Seven months later, the sinus closed and symptoms of pyonephrosis again appeared. At the second operation the kidney was removed and found to be filled with pus-cavities and to have a capsule two cm. thick. Recovery was uninterrupted. *Bacillus typhosus* was isolated from the urine and from the kidney. The patient gave a positive serum-reaction.

The sixth patient, a male of thirty-eight years, now in the hospital, who ten years ago was seized with a dull aching pain in the left side which has continued ever since. No calculus or blood has been passed. There have been night-sweats. On examination the urine was clear, there was an induration in the region of the left kidney. The cystoscope showed a reddened and thickened ureteral orifice on the left and the catheter met an obstruction 1.5 cm. above the bladder. The X-ray showed nothing. No tuberculosis was found elsewhere in the body. The tuberculin reaction was negative. At the operation a hard mass was found in the region of the left kidney which at first looked like carcinoma. However, it proved to be a capsule 2.5 cm. thick, surrounding a perinephritic abscess around the kidney. The kidney was largely destroyed and in it were several large stones. The X-rays evidently could not penetrate the thick capsule. A rib had to be resected in order to reach the kidney. The patient made an uninterrupted recovery.

The seventh patient was a male who was seized with pain in the groin 23 years ago. There have been intermittent attacks ever since, the pain never radiating to the testicle. For two years the attacks have been severe, recurring every four weeks. No blood or calculus have been passed. Only since the patient was first seen has there been pain in the kidney region. The X-rays showed a large calculus in each kidney. The cystoscope showed pus exuding from both ureteral orifices. One large calculus and nineteen smaller ones were removed from the right kidney at operation. The kidney was not removed. Recovery has been uninterrupted.

Nine cases of intra-ureteral calculus with operation have been reported; six abroad, one under Dr. Finney's care, and the two reported above.

Dr. Hunner reported a case of a female, with seven children, who had had pain in the left kidney region over 18 years. For four years the pain was in the region of the bladder and there was frequent desire to urinate, with sudden stoppage of the urine during the flow. The cystoscope showed the left ureter to be normal, the right ureter could not be seen but the right half of the bladder was filled with a tumor mass. The diagnosis lay between tumor of the broad ligament, stone in the intravesical ureter, or a cystic dilatation of the lower end of the ureter. At the operation a vesicovaginal fistula was made and the tumor when cut into proved to be a dilated ureter of the size of the middle finger. A window was made in the cyst wall and the mass is now retracting rapidly.

Sequestration of the Bladder.—Dr. Kelly said that in ulcer of the bladder a suprapubic operation can usually be done extraperitoneally but in some cases, if the ulcer penetrates the bladder, the operator has to enter the peritoneum. Thus in a recent case of tuberculosis of the bladder the peritoneum was torn into in spite of every effort to prevent it. A new method was therefore devised for closing off the bladder from the general peritoneal cavity. The peritoneum was fastened by sutures to the uterus and also to the broad ligament, and was then pushed away from the bladder and cut off.

Dr. Hunner remarked that there were two objections to the method; (1) if the omentum were incised, as Dr. Kelly suggested might be done in some cases, chronic adhesions would form and cause pain; (2) the method could not be used in women who were likely later to bear children.

Gonorrheal Suppurative Myositis.—Dr. N. M. Harris and Mr. Louis Haskell said it has been known since 1890 that the gonococcus may produce many lesions other than urethritis. Since 1892 a number of cases have been described as suppurative myositis, due to the gonococcus, but in most of them the conclusions have not been definitely proved. Thus in 1899 Survel reported eighteen cases, but only four of them were true myositis. In two the diagnosis was made by cover slips; in another the organisms described were isolated from the blood but not from the muscles. Ware (*American Journal of the Medical Sciences*, 1901) gives one case in which there was a history of chronic gonorrhea. The patient was unable to use his right arm, and on examination the posterior scapular muscles were found to be indurated. In shreds from the patient's urine gonococci were found. The tumor contained a serous fluid but no pus. Cultures were sterile but coverslips showed unmistakable gonococci.

The present case is that of a woman, thirty-four years old, admitted to the hospital July 3, 1902, complaining of stomach trouble. There was no history of rheumatism, but a long-standing vaginal discharge with burning micturition. Four weeks before admission the patient noticed a lump on the calf of the leg which was quite painful. Another similar lump developed in the sacrolumbar region. On examination the right leg was found to be considerably swollen below the knee and there was tenderness in the lumbar region. The leucocytosis was 16,000. Widal's reaction was negative. At the operation 759 c.c. of bloody pus was evacuated from the abscess in the leg and a large intramuscular abscess was evacuated in the sacral region. Coverslips showed gonococci and gonococci were grown on hydrocele agar tubes. Blood cultures made three days after the operation were negative.

Dr. Thayer said that in view of our present knowledge of gonorrheal septicemia it is not strange to learn of a new localization for the organism. He has seen three fatal cases of gonorrheal endocarditis outside of hospital practice, one of them last summer, the patient being a male of twenty-five years. After a mild attack of gonorrhea, which was treated by irrigation, arthritis developed and the patient had six severe chills before being seen. He became anemic, had further chills and fever and there was cardiac hypertrophy with a systolic murmur. The patient died six weeks ago. Blood cultures were negative.

Dr. Randolph reported three cases of gonorrheal arthritis, in which the origin of the infection was ophthalmia neonatorum. The latest is that reported by Paulsen and Kiel. An infant developed ophthalmia on the third day, which was followed on the eleventh by arthritis of the right knee and then of the left knee. Exudates removed by tapping contained gonococci.

Syphilitic Perineuritis.—Mr. Remsen exhibited this patient, a colored male, twenty-nine years old, who was admitted on April 25, 1902, with hemorrhages from the mouth. Syphilis was denied. In 1899 the patient was vaccinated and had pain in the arm like pins and needles for seven months. One year after vaccination the arm began to atrophy and there were cough and blood expectoration for one year previous to admission. On examination the left arm was found to be distinctly atrophied. Once during his stay, tubercle bacilli, very few in number, were reported to have been found in the sputum. On May 25 the patient died after a severe hemorrhage. At the autopsy the lungs were found to contain cavities and areas of caseation, with erosion of the pulmonary arteries. The muscles of the arm were much wasted. There was marked thickening around the brachial vessels and nerves, and the brachial veins were thrombosed. Above the lesions in the arm the nerves were normal. At the point of involvement there was peri- and endoneuritis with endarteritis in the vessels. Below the lesion the nerves were degenerated. The muscles showed degeneration and fibrous transformation. Microscopically no giant cells, no tubercle bacilli and no miliary tubercles were found in the lung, and the appearance of the lesion was similar to that of the process around the nerves in the arm. A diagnosis was therefore made of syphilis of the lung and gummatous perineuritis in the arm.

NEW YORK ACADEMY OF MEDICINE.

Section on Orthopedic Surgery.

Meeting of January 16, 1903.

T. Halsted Myers, M.D., Chairman.

Presentation of Cases.—Dr. Taylor presented a child six months old, no history of sickness or injury, who two weeks before was brought to the hospital on account of "snapping of the left knee." On examination it was found that the tibia becomes voluntarily subluxated forward, and was pulled back with an audible snap; this is specially noticeable when the child kicks and cries. The condition was noticed only three weeks ago by the mother. Birth was normal.

Dr. Sayre had seen some similar cases in children eight to nine years old. In his cases, if the leg were supported, the slipping did not occur.

Dr. Whitman had seen a number of such cases as that presented, also others in which the motion occurred in other joints. Last week he observed a child who "snapped" both hip-joints. He thought in the cases of "snapping knee" that the motion of the tibia was usually sideways rather than forward.

Dr. Shaffer presented three cases operated by Dr. Lorenz on Dec. 18, and spoke of a fourth. The first case, a girl aged eight years, had had some little pain for a few days after operation, slight ecchymosis in the inguinal region, otherwise satisfactory. Can go about with a chair but does not walk alone. The second case had been taken home after a week and a half and had done well under those surroundings. The fourth case was satisfactory, and could also get about with support. The other case was also doing well though the child was not present.

Dr. V. P. Gibney presented the following cases:

SEX	AGE	SINGLE, DOUBLE	PREVIOUS TREATMENT	DATE	OPERATOR
Female	9	Single	None	Dec. 15	Muller
Female	6	"	"	"	Lorenz
Female	7	"	"	"	Lorenz
Female	3	"	"	"	Gibney
Female	3	Double	Stretch, Weight and Pulley	Dec. 16	Whitman
Female	10	"	None	"	Gibney
Female	7	Single	"	"	Warren
Female	6	"	"	"	Whitman
Female	7	Double	Stretch, W. and P.	"	Whitman
Male	4	Single	None	Jan. 13	Gibney
Female	10	"	Stretch, W. and P.	" 15	Gibney
Female	11	"	" "	" 14	Warren
			UNSUCCESSFUL OPERATIONS		
Female	10	Single	Exten. bed, W. and P.	Dec. 16	Whitman
Female	10	"	" "	" 30	Gibney
Female	12	Double	" "	" 30	Whitman

In regard to the immediate discomfort of the operation, Dr. Gibney said that no patient in the hospital had been obliged to take a narcotic except probably on the first night and then only a small dose. As soon as practicable the cases were fitted with a high shoe and given a chair and allowed to go about the wards.

Walrus Fin.—Dr. Gibney also presented a case of a rare deformity, a reversion of type, as it were, or "walrus fin" deformity, in a child five years old. There was also congenital equino varus of the left foot and equino valgus of the right. It was being kept under observation and the number of bones lacking, the size of those present and methods of reducing the deformity were being determined. The scapulæ are rudimentary and the arms are in extreme inward rotation; the child can feed herself with difficulty.

Dr. Whitman said that the deformity in this case was in a way accounted for by the fact that the child was evidently in a constrained position in utero. We had seen the patient in the early months of life. It was a breech presentation, the extended limbs were flexed on the abdomen so that its feet were on either side of the head and the arms were fixed between the thighs, the hands being pressed into an attitude of abduction. This attitude could be reproduced for many months. It evidently explained the apparent anchylosis at the knee and elbow joints and the failure in muscular development.

Dr. V. P. Gibney stated that in the case he presented some years ago the hips were dislocated and the arms were in the same position as the case shown. It was also a breech presentation.

Congenital Dislocation of the Shoulder.—Dr. Sayre presented a case somewhat similar to Dr. Gibney's, resembling those reported by Scudder, of congenital dislocation of the shoulder, with twisting of the arm and slight flexion of the wrist. The patient, a boy, had been unable to use the left shoulder since birth. The diagnosis was separation of the epiphysis at the upper end of the humerus which had been unrecognized. The scapula on the left side is also much smaller than its fellow.

Dr. Fiske presented a girl of twelve years, seen Nov. 19, 1902, who, after a fall on the back of the wrist with the hand in extreme flexion showed the condition apparently of anterior dislocation of the carpus. There was no swelling, edema or sensitiveness. With a good deal of force the condition was reduced and the wrist put in plaster of Paris for three weeks, at the end of which time, when the dressing was taken off, the wrist was in exactly the same condition as before reduction was attempted. Dr. Fiske asked for suggestions as to treatment.

Dr. Whitman presented a case first seen two weeks ago. The patient, a youth eighteen years of age, complained of discomfort in the shoulder. On examination the right upper arm was found to be nearly two inches shorter than the left. Dr. Whitman thought the patient had probably always had more or less discomfort and thought that the shortening was due to arthritis or epiphysitis in early life. The X-ray showed downward and inward displacement of the head of the bone, as well as shortening of the shaft.

Dr. Homer Gibney presented a case of cured tuberculous disease of the ankle joints in a young child, eight years of age. The treatment was according to his usual method of putting the limb up in plaster and cutting windows in the bandage if suppuration occurred, through which drainage was carried out, followed by the use of apparatus. In the case presented no apparatus was being worn, the child was at home and went about as it pleased.

Dr. Homer Gibney also presented an X-ray of a case of dislocation of the fourth cervical vertebra, in a man who had fallen eight feet. He complained of pain, the head was tipped forward, the chin to the right, the pain was present in both shoulders. The discomfort was great and when seen 10 days after the accident in the dispensary, traction was decided upon. He was suspended in the swing for five minutes, and the pain was relieved, and he was able to get his arms above his head in six hours. He was suspended a second time for 10 minutes. The symptoms were all relieved and he went back to work. He referred to another case reported some years ago, the patient being a motorman. In some cases a half jacket was applied and in some the Thomas collar was used.

Discussion of the Lorenz Cases, and Other Hip Cases.—Dr. Taylor spoke of three cases operated by Dr. Lorenz at the Post-Graduate Hospital, two single, one double dislocation. They had done well, the shock was moderate and the pain not severe after the first 10 days. There was a great deal of ecchymosis and the children have been slow in learning to walk. A symptom presented in the two unilateral cases, and which he thought he noticed in one of the cases shown by Dr. Gibney, was paralysis of the quadriceps extensor femoris. This was explained he thought by forcible stretching of the anterior crural nerve. Dr. Taylor did not think this paralysis was a serious matter, or it would probably be entirely recovered from. He expressed surprise that none of the children operated on a month ago could walk, he did not consider their hobbling about with support or a roller chair as walking.

Dr. Myers thought it impossible to be sure that the paralysis of the quadriceps extensor existed, as in nearly every case the shortening of the ham-string muscles was not fully overcome at the time of operation, and this would prevent voluntary extension of the leg in its new position; moreover the electrical reactions could not be taken as the limbs were still in plaster.

Dr. Sayre reported on two cases operated on by Dr. Lorenz, both of which were in good condition. The case of double dislocation still showed some ecchymosis, as did the case of single dislocation. The children seemed reasonably comfortable, though the unilateral case was as yet unable to walk without assistance.

Discussion of the Case of Walrus Deformity.—Dr. Taylor referred to a somewhat similar case some years ago, where the elbows were anchylosed in extension and the shoulders very stiff. He thought the etiology of these cases was still obscure though Dr. Whitman's explanation threw some light upon it.

Dr. Sayre remarked upon the marked contraction of the flexors of the wrist in Dr. Gibney's case. The hand seemed in a condition similar to that seen in many club hands with deficient bones. The internal rotators of the shoulders were also contracted but the movement at the elbow-joint seemed fair. He thought by constant traction the arms could be brought into good position.

Dr. Gibney mentioned that in the reported case, several years ago, he had corrected the feet and had developed a fair-sized patella, also hip dislocation, which existed, had been reduced and he had secured a little motion at the knee. He had tried holding the shoulders back at various times but it seemed to cause great distress. He said he felt at a loss to know just what to do with the upper extremities.

Dr. Shafer suggested the daily holding of the limbs in position for a longer or shorter time. He did not think good results would follow forced position resulting in breaking of the tissues. Not having carefully examined the patient, however, he could not offer any definite suggestions.

Dr. Dowd suggested the feasibility of elongating the flexor tendons of the hands by operation.

Dr. Sayre thought that a good deal could be accomplished by elongating the flexor tendons and constantly keeping the shoulder back in position. This could be done on one arm at a time to avoid, as far as possible, the great discomfort consequent in immobilizing both arms. He spoke of a case under treatment in which the stretching process was carried out each time as long as the patient could endure it, and a fairly good position was being obtained.

Discussion of Dr. Sayre's Case.—Dr. Taylor said that the case appeared to be one of obstetric palsy with partial recovery. In such cases modeling of the joint's surfaces and subluxation, due to prolonged muscular contractions with vicious fixation of the joint was occasionally met with. Many of the cases of so-called congenital luxation of the shoulders were probably of this character.

Dr. Whitman referred to the open operation used by Dr. Phelps in contrast to bloodless reduction, stating that the latter was the operation of choice. He agreed with Dr. Taylor that the case presented by Dr. Sayre was one of obstetric palsy with secondary subluxation of the femur. He thought true congenital dislocation was extremely rare. In reducing the dislocation, he proceeded much as in the Lorenz operation for dislocation of the hip. He usually put the arm up in the Sayre position for fractured clavicle, but in some cases had fixed it with the upper arm raised to the level of the shoulder straight from the side. He had only operated on four cases of which two had disappeared from observation. He simply expected to overcome the deformity and to restore the power of supination of the hand, he does not look for restoration of motion at the shoulder-joint.

Dr. Myers said he had several times stretched, under ether, the contracted pectoral muscles in a similar case, but without satisfactory results.

Dr. Sayre had as yet no results, his cases being as yet under observation or had disappeared. He considered the free shoulder motion due to the formation of a new glenoid cavity. He thought as to treatment, that while forcible manipulation was theoretically proper, its results were uncertain.

Discussion of Anterior Dislocation of Wrist.—Dr. Whitman thought this resembled cases of so-called spontaneous subluxation, described by Madelung. The other wrist presented a somewhat similar condition and it might be that the fall had simply exaggerated a preexisting deformity.

Dr. Sayre said that the lower end of the radius seemed to him to be abnormally shaped. He thought there was a twist in the lower epiphysis of the radius, as if it had been fractured. The cartilage below the ulna was also dislocated. He observed that the child was probably rickety, and that this had a bearing on the treatment.

Dr. Wallace said that he felt pretty sure from examination, that the tendon had slipped over the styloid process and this retained the position of deformity. He felt confident that if the tendon were pulled back into place and the wrist fixed long enough there would be no further trouble.

Case of Dr. Whitman—Short Humerus, Arthritis.—Dr. Taylor remarked that he had seen a number of cases of congenitally short humeri; such cases came under the class of phocomelia. This condition had been found in epileptics, and had been classed as a stigma of degeneration. The case presented, however, did not come under this category, as it appeared to be due to previous joint trouble.

Discussion of Dr. H. Gibney's Cases.—Dr. V. P. Gibney said that the case of tuberculous ankle-joint was in keeping with their general results. He spoke of a series of 56 cases which he looked up some years ago with final recovery. It seemed of this series that the joints which suppurated most made the most permanent recoveries.

Dr. Sayre, referring to the case of dislocated cervical vertebra, said he had seen several similar cases with fracture and displacement of the vertebræ with paralysis in one or both arms. After support and the use of a jacket extending to include the head, the paralysis disappeared in a comparatively short time, eight weeks. The head was supported six to eight months. The deformity had not been entirely relieved.

BOOK REVIEWS.

A TEXT-BOOK OF THE DISEASES OF THE EAR FOR STUDENTS AND PRACTITIONERS. By Professor Dr. ADAM POLITZER of Vienna. Translated by the personal request of the Author and Edited by MILTON J. BALLIN, Ph.B., M.D., and CLARENCE L. HELLER, M.D. Fourth Edition. Lea Brothers & Co., Philadelphia and New York.

THIS fourth edition of Politzer's Text-book makes it the most complete in existence on Diseases of the Ear; and, through its revision and recent additions by the author, the most up-to-date treatise. For example, the subject of Brain Abscesses of Otitic Origin is studied in the light of all the valuable Italian, German, French, English and American literature recently contributed to it. Nothing of value pertaining to such a complete treatise has escaped this master who has taken pains to go into detail in every matter calling for it. Even its relation to life-assurance is considered. Yet, with such thoroughness, the work appears in a volume of only 884 pages, handy and compact and just suited to the purpose of daily and diligent use by the physician who seeks to know all that this master teaches.

Confining himself to the subject of the ear, the author purposely devotes but little space to the nose and nasopharynx and refers his readers to other treatises on these subjects. We like the references in the text to footnotes. Yet this does not exhaust the bibliography, for twelve pages printed in small type are devoted to this, under the title Index of Literature, and abounds in references to American authors. Besides this there is a copious general index.

The publishers have contributed their share in making the book what it ought to be. There is nothing superfluous in it. The ink and type are sharp and clear, though the "make-up" (a minor matter) must have had a new hand. If the free margins near the binding had been widened one-eighth or one-sixteenth of an inch at the expense of the outer margins, it would have been better. But type, paper, compactness and handiness of size all combine to please.

BOOKS RECEIVED.

The MEDICAL NEWS *acknowledges the receipt of the following new publications. Reviews of those possessing special interest for the readers of the* MEDICAL NEWS *will shortly appear.*

BIOGRAPHIC CLINICS. By Dr. George M. Gould. 12mo. 229 pages. Illustrated. P. Blakiston's Son & Co., Philadelphia.

SURGICAL ANATOMY AND OPERATIVE SURGERY. By Dr. J. J. McGrath. 8vo, 556 pages. Illustrated. F. A. Davis Company, Philadelphia.

BOOK ON THE PHYSICIAN HIMSELF. By Dr. D. W. Cathell. Twentieth Century Edition. 8vo, 411 pages. F. A. Davis Company, Philadelphia.

SYSTEM OF PHYSIOLOGIC THERAPEUTICS. Edited by Dr. S. S. Cohen. Vol. V. Hygiene. 8vo, 539 pages. Illustrated. P. Blakiston's Son & Co., Philadelphia.

MANUAL OF MATERIA MEDICA AND PHARMACOLOGY. By Dr. D. M. R. Culbreth. Third Edition. 915 pages. Illustrated. Lea Brothers & Co., Philadelphia and New York.

ATLAS AND EPITOME OF THE DISEASES OF THE MOUTH, PHARYNX AND NOSE. By Dr. L. Grünwald. Edited by Dr. J. E. Newcomb. 8vo, 219 pages. W. B. Saunders & Company, Philadelphia and London.

THE MEDICAL NEWS.

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ORIGINAL ARTICLES.

A NEW USE FOR THYROID EXTRACT; A CURE, OR AT LEAST A COMPLETE CONTROL OF HEMOPHILIA THROUGH ITS ADMINISTRATION; ITS EFFECT ALSO ON ANOTHER FORM OF HEMORRHAGE.[*]

BY EUGENE FULLER, M.D.,
OF NEW YORK.

HEMOPHILIA is a disease of which the etiology, the pathology and the cure have so far remained unknown. When the surgeon in his work has encountered a "bleeder," death has been looked upon as the natural consequence.

Somewhat over eight months ago a father brought his fifteen-year-old son to my clinic at the Post-Graduate Hospital.[†] The family history of the case was as follows: The people were Hebrews. Four of the boy's mother's brothers had bled to death following circumcision performed as a religious rite. The two elder brothers of this boy had likewise bled to death following circumcision. With this terrible experience the father refused to have the rite practised on this son and also on another one eight or nine years younger. The one daughter in the family has always been perfectly well. The boy in question has never been strong. In early years he had copious nosebleeds and lost so much blood during the shedding of his first teeth as to produce alarming symptoms. His joints have swollen repeatedly. As the result of the slightest bruising extensive subcutaneous hemorrhages have followed, which on numerous occasions have confined him to bed for considerable periods. For the last year or so he has been kept in a very weakened state through spontaneous attacks of hematuria. The amount of blood lost in this way has been extreme. The bleeding has been unaccompanied by urinary symptoms aside from bright red blood in the urine, except that occasionally there have been attacks of renal colic due to the passage along the ureter of clot. Between the hemorrhages the urine has been clear and normal. When the urine has been bloody the microscope has shown abundance of red blood corpuscles, thus excluding the condition known as hemoglobinuria. When I first saw the boy he urinated on request into a glass ℥vj of what had the appearance of pure blood. His pulse was over 130 and very weak. He was extremely cachectic and short-breathed. I prescribed at that time the usual internal styptics, gave a bad prognosis and asked the father to bring back the boy in a week.

The father reported the next week that the boy still continued to lose blood profusely with his urine and that he was too weak to leave his bed to come to the clinic. Some slight change was again made in the treatment. At the end of a week or two later the father again appeared and stated that he thought his boy was dying. I then decided as an experiment to prescribe thyroid extract and ordered five grs. three times a day to be given, all other medication being discontinued. At the end of a week the father again appeared. He stated that after the second dose all bleeding had stopped and that the boy had greatly improved. I ordered the drug continued. At the end of the next week the father brought the boy to the clinic. The boy had then fair color and better strength than he had experienced for a very long time. The urine was perfectly clear and normal and had so remained for the two weeks since beginning the medication. The pulse was about 100 and fairly full. There was still some swelling of the joints. At this visit the young brother was also brought in for examination. This little boy had never as yet had severe hemorrhages. For the last year or so, however, his joints have swelled, much as the older brother's had at that age. I put this small boy on 2½ grains of thyroid extract three times a day. At the end of another two weeks the elder boy again appeared. This time he came alone. He reported that he felt all right and differently from ever before. His color was very good; his pulse was full and natural. He had gained considerably in weight and the swellings of the joints had disappeared. He was exercising and going about in a natural manner, and for the first time in his remembrance no subcutaneous hemorrhages followed as the result of the slight contusions consequent on his bodily activity. I have no detailed report as yet to make in the case of the little brother.[*]

It may be said that one experiment is not enough to determine the value of thyroid in this connection. The case, however, on which I have tried it and apparently succeeded is a very typical and pronounced one of its kind. Such cases are very rare and any one practitioner would have to busy himself a lifetime to encounter half a dozen such. This one report will give the profession as a body a chance to follow up the treatment. It will serve to aid in the determination of the etiology and the pathology of the disease. It will also show the close relationship that exists between hemophilia and the other defective conditions over which the secretion of this gland has control.

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[*] Read at the Genito-Urinary Section of the Academy of Medicine, November Meeting, 1902.

[†] I reported this case at the 1902 Meeting of the American Therapeutic Society.

[*] Since this report and nine months after my first seeing the case, the elder brother again came to my clinic. He reported that he had not lost blood in his urine or otherwise since he had first began using thyroid extract, which drug he had taken continuously since I had first prescribed it. The patient had grown much since I had last seen him; had good color, and was relatively stronger and more alert mentally than he had been for years.

Since the preceding case I have made use of thyroid extract in a second clinical instance of hematuria. In this instance also the bleeding ceased promptly and effectually with the administration of the drug. In this second case the etiology of the hemorrhage was apparently different from that in the first, and on that account I did not make use of thyroid extract until surgical means had proved inefficient, and not in fact, until the case seemed almost beyond hope.

The second case represented a man about fifty-five years of age. For a year before consulting me he had been under treatment in competent hands for nephritis. Early in that year he had had a severe uremic attack consisting of sudden loss of consciousness followed by a temporary paralysis of several groups of muscles. His urine then, although free from blood, contained albumin, casts and a deficiency of urea. Blood appeared in his urine about two months before I first saw him. During that time he had had such profuse and nearly constant hematuria that he had become very weak and extremely pallid. Before coming to me his attending physician had taken him to a surgeon who had pronounced the hemorrhage from the right kidney, because on using the Harris segregator the bloody urine had all been collected in the right vesical subdivision. As the result of considerable clinical study I demonstrated that the bleeding came wholly from the prostatic sinus and not at all from the kidney. The wrong conclusion in this case, drawn from the test with the Harris instrument, was due to the fact that the blood flowed back into the right vesical compartment rather than into the left when the segregator was being used. The deep urethra was granular and there was a moderate degree of stricture in the penile portion. There was a general condition apparently of arteriofibrosclerosis. I made a bad prognosis, but suggested that a perineal section, which would give access to the bleeding area followed by vesical drainage would be apt to permanently check the hemorrhage and do much good. My suggestion was accepted and I performed the operation. The prostatic sinus was found to be lined with granulation tissue. The prostatic fibers were rigid and contained an excess of interstitial tissue. An incision was made through these fibers well down toward the rectal wall, and the surface granulations were removed by gentle curettage. The bleeding was temporarily checked, but severe secondary hemorrhage soon manifested itself and persisted for several days in spite of careful attention to vesical drainage and independent of vesical tenesmus. As surgical measures had failed to stop the bleeding, I decided to make a trial of thyroid extract in five-grain doses by mouth three times a day. Notwithstanding the brilliant result effected by the drug in the preceding case, I had little confidence in its efficacy in this second instance owing to the apparent difference in the etiology of the bleeding. The hemorrhage, however, promptly and permanently stopped, the wound healed and the patient left the hospital with perfectly clear urine. After leaving the hospital two five-grain doses of the thyroid extract were continued. The subsequent progress of the case has been satisfactory in that no further bleeding has occurred. The symptoms dependent on the nephritis, however, have been progressive.

CORTICAL HEMIANOPSIA AND SECTOR DEFECTS OF THE VISUAL FIELD.

BY EDWARD JACKSON, M.D.,
OF DENVER, COLO.

LOOKING at a well-drawn chart of the field of vision in a typical case of half-blindness the pathological condition seems so definite, its symptoms so characteristic, that one might easily forget the difficulties these cases present clinically, and might wonder why they are so frequently overlooked. It is but little more than one generation since hemianopsia first received definite clinical recognition by any one; and still, unless the patient's condition is investigated with special reference to such a defect, unless the field of vision is measured with more or less care, the real character of the case is likely to remain unrecognized.

Sometimes the patient gives a very suggestive hint as to the character of the trouble, in the statement that he sees half of the object looked at, while the other half is totally blotted out. But no such statement may be made; and when the loss of the field does not extend to the immediate neighborhood of the fixation point, nothing but the mapping of the field may give any hint as to what is the matter. Sector defects, which probably occur almost as frequently as complete lateral hemianopsia, generally remain an enigma to the patient, and too often to the physician also. The purpose of this paper is to draw attention to some of the difficulties of diagnosis encountered in these cases.

Hemianopsia figures in the old clinical records as blindness of one eye. The trained physician then failed to discriminate between blindness of one eye and blindness of one-half the field in both eyes. The reasons for this are easily recalled, especially the inequality of the two "halves" of the fields, the temporal "half" being so much the larger. The uncertainty which long existed regarding the decussation of the chiasm helped to continue the confusion. It still happens that the patient in a large proportion of cases, as in Case III, given below, comes with the statement that he is blind of one eye. This statement should never be accepted without careful testing, unless sufficient cause for the blindness of the one eye is immediately evident.

In half-blindness, even allowing for the difference in size between the nasal and the temporal halves of the field, one might expect to find the division line a straight one. But almost invariably the seeing field encroaches upon the blind part, at the region of the fixation point. The line of demarcation sweeps around this point toward the blind side, keeping two or three, or even five or ten degrees from it.

But apart from this there are always slighter irregularities in the boundary between blind and seeing portions; and repeated careful testing shows that these irregularities are not due to errors of observation, inaccurate responses by the patient, or slight movements of the eye. In reality the straight line of demarcation, too often shown in charts of the field, does not exist. Hence the finding of irregularities in this line does not negative the idea of an hemianopic lesion, but supports it. Indeed, if a given case should show an absolutely straight border to the blind portion of the field it might be taken as valuable evidence of malingering.

The thing that is significant of hemianopsia is that in the two eyes the indentations and extensions of the blind area correspond to each other. They are not identical in shape, but the correspondence is sufficient to identify the portions of the retina having connection with the same part of the visual center. This is illustrated in all the following cases.

Case I.—C. B. M., aged forty-eight years, laborer, four years ago fell, striking his head so that he was stunned. But no very serious symptoms were immediately noticed. Subsequently, however, impairment of vision developed, and examination showed a fracture of the occipital bone. Trephining at the point of injury revealed fragments of the inner table of the skull driven into the cortex of the occipital lobe. This history was furnished by Dr. J. T. Eskridge, who sent the patient to me for examination. Beginning two inches above the occipital protuberance, one-half inch to the right of the median line, was a depression which extended to the right and about fifteen degrees upward for two inches, and which was about half an inch wide. The fields of vision, as here illustrated, showed left lateral hemianopsia. Light perception being lost in the left field, the blindness extending to the median line in the lower part of the field to about five degrees from the fixation point, and above the fixation point the boundary of the field passed some five to ten degrees to the left of the vertical meridian. In this upper part there was a strip of the field with greatly impaired vision. This strip, shown by lighter lines in the charts, was in its turn sharply separated from the normal portion of the field to the right. This narrow strip retained fair light perception, indicating that the right cortical visual center had not been wholly destroyed. The pupils reacted normally to light thrown on either half of the retina.

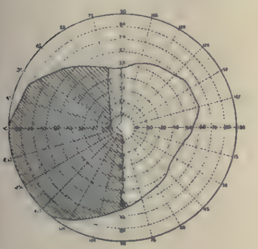

Fig. 1.

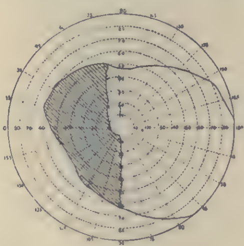

Fig. 2.

Fig. 1. Case I.—Field for Left Eye.
Fig. 2. Case I.—Field for Right Eye.

In addition to his hemianopsia the patient was hyperopic I. D. in each eye, and required the help of lenses for presbyopia. His corrected vision was four-thirds partly in each eye. He had also a paresis of the left external rectus, which made it difficult to use the two eyes together, especially on turning them to the left, as he had to do to make up for the defect in that part of the field.

Although in the above case the line of demarcation of one eye could not be exactly superimposed upon that of the other, it is not difficult to trace the close correspondence between them. This correspondence becomes still more striking when the hemianopsia is only partial, that is, when the blind part of the field is rather a sector defect. This is well illustrated in the following case:

Case II.—W. R. W., a soldier in the Civil War, in September, 1862, when twenty years old, received a gunshot wound of the occipital region. He stated that he was entirely blind for a few days, and subsequently "saw through a haze." His wound was not healed when he left the hospital at the end of three months. He still has spells of hazy vision, preceded by vertigo and followed by headache. September, 1892, I found on examination a depression of the skull one inch in diameter, its center one-half inch to the right of the median line and one and a half inches above the occipital protuberance. This marks the sight of the wound of entrance. From this a groove extends down and to the left to a point one and a quarter inches to the left of the median line and one-half inch higher than the occipital protuberance. This is the point of exit. The groove is about one-half inch wide and deepens as it passes to the left, being fully three-eighths of an inch deep, near the lower end. The scalp over this part is well covered with hair, and there is very little tenderness on pressure.

The eyes were normal. Right with +0.50 spherical, had $^{15}/_{15}$ vision. The Left had vision of $^{15}/_{70}$, not improved by any glass. He stated that up to the time he received his wound, his eyes had been crossed, the left turning in. The fields of vision are shown in the accompanying illustrations. The reactions of the pupils were normal.

The above cases are of special interest from the definiteness of the lesions causing the hemianopsia, wounds involving the visual cortex in the occipital lobe. The correspondence in outline may become of vital importance in particular cases. For instance, in a case of coarse cerebral lesion, attended with optic neuritis, running on to atrophy, the field of vision is liable to be greatly contracted. This contraction may be highly irregular. It sometimes obliterates one-half the field, and with the lowered acuteness of vision and narrowed fields, it might be very difficult to decide if the condition were one of true lateral hemianopsia, due to lesion behind the chiasm, or were simply an irregular contraction of the field caused by consecutive optic atrophy.

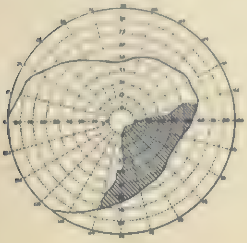
FIG. 3.

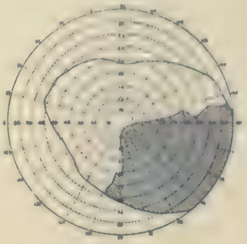
FIG. 4.

Fig. 3. Case II.—Defect of Field for Left Eye.
Fig. 4. Case II.—Defect of Field for Right Eye.

The simulation of lateral hemianopsia by the contraction of the field in a case of tabetic atrophy, is well shown in Fig. 5, which represents the field for the left eye. In the right eye vision had been reduced to bare perception of light. In Fig. 6 is reproduced the chart of a field closely simulating an hemianopic sector defect, but really caused by detachment of the retina. The left eye of this patient had a normal field. It may be of vital importance to distinguish hemianopsia from these conditions which simulate it, and a careful study of the line of demarcation with reference to this question of correspondence between the fields of the two eyes, will almost always decide the question with certainty.

While the part played by hemianopsia in the diagnosis of a given case, is most frequently that of a localizing symptom, its recognition may throw the first light as to the real cause and significance of obscure cerebral symptoms. This was strikingly so in the following cases.

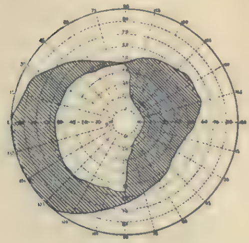
FIG. 5.

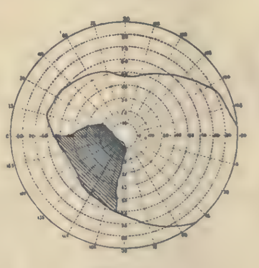
FIG. 6.

Fig. 5. Contraction of Field by Optic Atrophy Simulating Hemianopsia. Left Eye.
Fig. 6. Sector Defect Due to Partial Detachment of the Retina. Right Eye.

Case III.—R. P., aged sixty-two years, an actor, living at the Forrest Home, near Philadelphia, after a day spent in the city, returned to the Home with flushed face, evidences of excitement and slight disturbance of coordination. The next day these symptoms had disappeared. The superintendent, in sending him to me, expressed the opinion that Mr. P. had suffered from "congestion of the brain" after a day of heavy drinking; and that since that "he is a wreck."

The patient's statement, which there is every reason to believe, was that he drank nothing whatever. But that the day in question, he was entirely unconscious of what occurred after 3 P. M., until 11 A. M. the next day; except that he remembered during that time noticing flashes of light to his right. Since then he states, that "sees plainly with the left eye, but not at all with the right." He has always been near-sighted. In walking he keeps his head turned to the right. He cannot read because he sees only a single word at a time. There is limitation of movement of both eyes to the right, almost complete paralysis of the internal rectus muscle of the left eye, and great weakness of the inferior rectus of the left eye. I found complete right lateral homonymous hemianopsia; the fields being, as shown in the charts: Right—3.50 sph. Vision=4/4 partly; left—3.50 sph. Vision=4/5 partly. He has always been quite color blind. The pupils reacted quite as well to light thrown on the blind half of the retina, as to light thrown on the seeing portion.

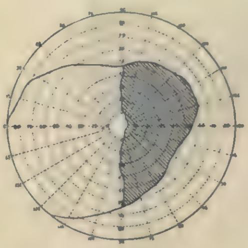
FIG. 7.

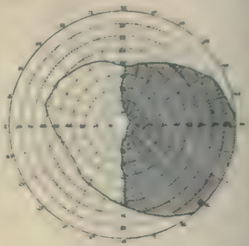
FIG. 8.

Fig. 7. Case III.—Field for Left Eye.
Fig. 8. Case III.—Field for Right Eye.

Eighteen months later he could read a good deal, and his vision had risen to $^4/_4$ in each eye. But there was still weakness of the left inferior rectus. The fields of vision continued unchanged.

The ophthalmoscope showed the media clear, the disc slightly dragged, but no choroidal atrophy.

In the right there were a few very small hemorrhages and a few minute white dots, in the region of the macula. In the left this region was normal.

Case IV.—E. H. B., aged seventy years, an active business man, was brought to me by his son, a physician, with the history that his vision had failed within a month or so. That he could not see where to write his name when signing a letter, and that he had noticed when playing cards, that a card might be lying on the table turned up, and he would not know it, could not see it unless he looked directly at it. He was myopic, but with, Right —5. vision=4/50; left —6.○—1 cy. ax. 180°=4/12.

The ophthalmoscope showed moderate crescents of choroidal atrophy, and a few small patches of partial atrophy in other parts of the fundus. In the right eye there was high irregular astigmatism. The fields of vision showed a sector defect in each lower left quadrant, as shown in the illustrations. The reaction of the pupil to light thrown upon the blind portions of the retinas was perfect. This patient had already shown slight evidences of mental disturbance; but nothing that had awakened serious alarm on the part of his family. I did not see him again, but learned subsequently that his impairment of vision increased. He died within a very few months of cerebral softening, of which the first definite symptom was sector defect of the field of vision.

Neither of these last two patients came with any clear idea of the nature of his visual defect. They only knew that they suffered with some interference with vision of recent origin, and up to the time of the discovery of the true character of this visual defect, the medical advisors and family had failed to see any evidence of organic disease.

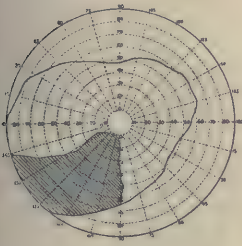

Fig. 9.

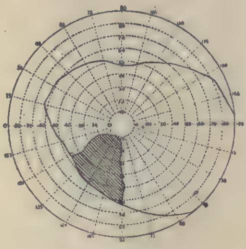

Fig. 10.

Fig. 9. Case IV.—Field for Left Eye, Sector Defect.
Fig. 10. Case IV.—Field for Right Eye, Sector Defect.

Cases I and II are of especial interest as throwing light on the connection of certain parts of the visual cortex, with certain parts of the retina. Cases reported by Hun and Wilbrand seem to show that the upper part of the visual cortex, the upper lip of the calcarine fissure, is connected with the upper part of the retina, having to do with the lower quadrants of the field. Henschen, too, indorses this idea. It will be noticed that in both of these cases the position of the injury was such as almost certainly to destroy the upper and posterior part of the visual cortex, the posterior part of the upper lip of the calcarine fissure, before injuring the lower anterior portion of the cortex situated upon the lower lip of that fissure. Furthermore, in Case I, in which the hemianopsia was nearly complete, the gradual loss of vision indicated a gradual progressive process which stopped just short of the involvement of the whole right visual center. These cases therefore give additional support to the view that the upper portion of the cortex has to do with the lower parts of the fields. They support it about as strongly as cases can, without the careful post-mortem examination of the region of the injury.

From the reaction of the pupils to light thrown on the blind portions of the retinas, taken in connection with the absence of other symptoms, it is extremely probable that the lesions in Cases III and IV were in the visual cortex or immediately beneath it. But the localization could not without a post-mortem examination be so exact as in the cases of traumatism.

OSSICULECTOMY.*

BY EDWARD B. DENCH, M.D.,
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The subject which you have asked me to make the theme of my paper this evening, is one of more than ordinary interest to the otologist. From the time that Kessel first suggested the feasibility of operative interference for the relief of inflammatory processes, causing adhesions between the various elements of the ossicular chain, to the present date, operative procedures within the tympanic cavity have had a place in otological surgery.

More or less discussion has arisen from time to time as to the advisability of such operations, simply for the relief of the results of intratympanic adhesions. By that, I mean, either for the improvement of hearing, the relief of tinnitus, or relief of vertigo. The advisability of removing the ossicles in cases of tympanic suppuration has, I think, never been questioned. The mere fact that dead bone is present in the tympanic cavity, constitutes a logical reason for its removal, and this operation has been practised ever since otology became a science.

We have then, as the indications for the operation of ossiculectomy, three classes of cases with which to deal: (1) Those cases in which the patient is suffering from what is commonly known as a chronic non-suppurative otitis media; in which the membrana tympani has always been intact, and for which operative procedures are undertaken either for the improvement of the function of the organ, or for the improvement of certain symptoms, such as subjective noises and vertigo; (2) those cases in which an operation is undertaken primarily, for the relief of chronic suppuration. Here, the principal object of the operation is to remove all dead bone from the tympanic cavity and cause a cessation of the discharge. Incidentally, the surgeon may also aim, in those cases, to improve the hearing, also to relieve certain subjective symptoms. But the main object in this class of cases, is to effect a cure of the otorrhea; (3) we have to deal with a class of cases in which there has been previous suppuration. At the time the patient comes under observation, however, this suppuration is either so slight as to cause the patient no inconvenience, and as to constitute practically no menace to life, but the results of the suppurative process remain. Here we have the ossicular chain bound down by adhesions, and the function of the organ impaired as the result of the changes which have taken place within the middle ear.

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* Read before Section of Otology and Laryngology, College of Physicians, Philadelphia, Pa., November 19, 1902.

Under these three heads, I think, may be classed all of those cases which apply to the surgeon for relief, and in which the operation of ossiculectomy may possibly be undertaken.

Turning now, to the cases belonging to the first class, that is, to the chronic non-suppurative cases, where the operation is performed entirely for improving the function of the organ, or for the relief of the subjective symptoms, we have to consider what are the indications for operation in any individual case. I think that operative interference in these cases has fallen into disrepute very largely from the fact that many patients have been operated upon merely because they were very hard of hearing, and because an otoscopic examination revealed the presence of a chronic non-suppurative inflammation which had been unimproved by other measures of treatment, and the surgeon deemed this a sufficient indication to attempt operative interference. In some of my own cases, of which I shall speak later, I have advised operation simply in the hope that the patient might be benefited, in spite of the fact that the operation seemed to be contraindicated. In every case, the operation has been a failure. For this reason, therefore, I think I may be pardoned if I dwell for a short time upon the indications for operation in these cases. No case should be operated upon with any hope of improvement, unless a careful functional examination shows that the impairment in audition is due entirely to a middle ear lesion and that the labyrinth is not involved. We must have normal or, better still, exaggerated bone conduction on the affected side, an elevation of the lower tone limit commensurate with the degree of impairment of hearing and a normal upper tone limit. In some cases, we will find that the upper tone limit is slightly reduced at the time of the first examination, but upon catheter inflation, that the limit returns to the normal standard. This variation in the upper tone limit constitutes rather an indication for the operation than otherwise, as it seems to signify that the lowest turn of the cochlea has begun to suffer from the pressure of the stapes upon that part of the labyrinth nearest the oval window, but that the relief of this tension by inflation is sufficient to restore the labyrinth to a normal condition. It goes without saying that if the hearing improves greatly on inflation, no surgeon would operate on the case at once, no matter of how long standing the disease might be. In those patients who demand operation, we almost always find the Eustachian tube abnormally patent. Of course, if the hearing improves greatly under catheter inflation and the Eustachian tube is narrow, no surgeon would think of operating upon the case until the narrowing of the Eustachian tube had been overcome and all possible improvement gained by this form of treatment.

It has been my invariable experience that where bone conduction is diminished, and the upper tone limit much reduced, operative interference is absolutely valueless, and may, in fact, cause an increased impairment in the hearing. In dealing with the non-suppurative cases, we find that the ordinary history is that the hearing has been impaired for a number of years before the patient first comes under observation. It is frequently only when the impairment of hearing is noticed in the previously healthy ear, that the patient applies for relief. It has been my experience that operative interference in such a case not only improves the hearing in the ear operated upon, that is, the poorer ear and the one first affected, but also renders the progress of the disease much slower upon the opposite side, and in some instances, seems to arrest its progress altogether.

I recall one case, that of a young man operated upon five or six years ago, in which there was but slight impairment upon one side. This case was followed for a couple of years, and no improvement resulted from local treatment. In fact, the hearing was slowly but steadily becoming worse. The hearing in the opposite ear was, however, excellent. I advised operation and removed the malleus, incus and membrana tympani from the affected side. The hearing was improved in the ear operated upon, and there has never been any impairment of function in the opposite organ. This young man suffers no inconvenience from the little impairment of hearing which remains in the affected ear.

In another case operated upon last winter, in which a precisely similar condition existed, excepting that the disease was of longer duration and the hearing much more impaired upon one side, the results of operative interference were very satisfactory. I cite these two cases, because here the results were exceedingly good. In no instance, has the operation failed to be of benefit, in which the indications, as above given, have been carefully followed in order to determine the advisability of operative interference. It should be laid down, I think, as an absolute rule, that where the upper tone limit is very much interfered with, and does not return to nearly the normal standard, as the result of inflation, that operation is contra-indicated. By marked lowering of the upper tone limit, I mean where this limit falls below 1 (31,000) or 1.5 (26,000) on the Galton whistle of Edelmann. These limits are for the improved Galton whistle. If the ordinary instrument is used the limit will be 2.—2.5.

Regarding the technic of the operation, perhaps a few words may not be amiss. I shall speak here of the technic first in cases of chronic non-suppurative otitis media, that is, those cases in which the drum membrane is intact. Many of these remarks on technic will also apply to residual purulent cases and to cases of chronic suppurative otitis media, in which the ossicles are removed primarily for the improvement of hearing or the relief of subjective symptoms. In all cases in which the ossicles are to be removed for the impairment of function, the object of the operation is to free the stapes and to allow aerial vibrations to fall directly upon the head of the mobilized stapes without the intervention of the other members of the ossicular chain. In every case therefore, in which an ossiculectomy is contemplated, the operator should first expose the region of the oval window and should liberate the stapes as freely as possible. In the chronic non-suppurative cases this can be done, in almost every instance, by first performing what I term an "exploratory tympanotomy." All of these operations for functional improvement can be performed under cocaine anesthesia, and the results are much better in the cases operated upon in this way, than when a general anesthetic is employed. It is of great advantage to be able to test the hearing from time to time during the operation, and to determine exactly how much, if anything, has been gained by each step of the procedure.

Taking a simple case of chronic non-suppurative otitis media, my procedure is as follows: Some hours before the operation, the external auditory canal is thoroughly scrubbed with an alcoholic solution of bichloride of mercury of a strength of 1 to 3,000. This scrubbing must be somewhat vigorous in order to remove all foreign material which may have lodged in the external auditory canal. It goes without saying that the scrubbing should not be so severe as to remove the superficial layer of epithelium, but sufficient to cleanse the canal thoroughly. In addition to this, it should be remembered that the surface of the membrana tympani should also be mopped off with this solution. After the canal has been cleansed in this manner, it should be lightly dusted with boracic acid, and a pledget of sterilized cotton introduced into the canal. The entrance of the canal is occluded by a second pledget of sterile cotton. These pledgets are not removed until the time of the operation. The instruments required for the operation are: a straight sharp-pointed myringotome, a blunt myringotome, right and left angular knives, right and left incus hooks, small forceps for extracting the ossicula, and the usual cotton-holders and aural specula. As the operation is performed under cocaine anesthesia, we also require a 20-per-cent. sterile cocaine solution and for the control of hemorrhage which, in these cases, always constitutes an obstacle to perfect manipulation, a sterile solution of adrenalin chloride, of a strength of 1 to 5,000. The operation must be conducted under as strictly aseptic precautions as any other operation in surgery. All instruments used must be thoroughly sterilized, the hands of the operator must be thoroughly cleansed, and the field of operation surrounded either with sterile towels or with towels wrung out in a solution of 1 to 1,000 bichloride of mercury. The cotton plugs should be removed from the canal and the canal cleared of boric acid by mopping it out with a cotton pledget moistened in an alcoholic solution of bichloride of mercury, of a strength of 1 to 3,000. As it is impossible to anesthetize the surface of the drum membrane by means of a cocaine solution, the first step of the operation must be painful, although this pain is never so severe as to cause serious complaint on the part of the patient.

The first step of the procedure consists in incising the membrana tympani by means of the sharp myringotome in the posterior and inferior quadrant, just within the line of attachment of the membrana tympani to the tympanic ring. If the knife is sharp, it can be carried through the drum membrane quickly and an incision made in an upward direction for the length of about one-sixteenth of an inch, without causing the patient anything more than temporary discomfort. After this incision has been made, a fine probe wound with sterile cotton is saturated in the cocaine solution and the cocaine applied to the lips of the incision. At the end of two or three minutes, a delicate probe can be introduced into the incision, and the patient will experience absolutely no sensation. The incision is then extended upward by means of the blunt myringotome, the cut being made close to the periphery of the membrana tympani and following its line of attachment upward until the region of the incudo-stapedial articulation is reached. As soon as the patient experiences pain, the operation should be discontinued, and the cocaine solution applied through the opening in the drum membrane until perfect anesthesia is secured. This incision should gradually be extended upward as far as the posterior fold. It should then be continued forward in the line of the posterior fold as far as the short process of the malleus and then downward along the long process of the malleus for about one-half its length. It will be necessary, as before stated, to repeat the anesthesia several times before this tongue-shaped flap can be cut from the drum mebrane. In some cases the membrana tympani is quite vascular, and the field of operation may be obscured by bleeding. When this occurs the canal should be mopped out with a cotton pledget, and then a cotton-tipped probe moistened in the adrenalin solution should be introduced through the perforation made in the drum membrane and held in position for a few seconds. This will effectually control all hemorrhage and give the operator a perfectly clear field. After the flap has been turned down from the drum membrane in the manner above described the incudo-stapedial articulation will be visible in almost every instance. I cannot recall a single case in which I could not see either the incudo-stapedial articulation, the descending process of the incus, or the posterior crus of the stapes. Frequently it is necessary to tilt the patient's head well over upon the opposite shoulder, so as to enable the operator to look up behind the posterior fold or behind the margin of the *annulus tympanicus* in order to see the structures above named. If the field of operation is kept clean and the patient's head put in proper position, the operator will seldom fail to see some portion of the articulation or of the incus or of the stapes. In one or two instances I have found the articulation covered completely by reduplications of mucous membrane. In these cases, however, there was a prominence in the posterior portion of the tympanic cavity which, upon impact of the probe, yielded slightly, showing that it consisted of mucous membrane. A vertical incision made through these folds with a sharp myringotome, instantly revealed the incudo-stapedial articulation. It sometimes happens that, owing to the development of adhesions about the stapedius muscle, between the posterior crus and head of the stapes and the adjacent wall of the oval nitch, that the stapes is pulled upward and backward, so that the articulation lies almost entirely behind the margin of the tympanic ring. In these only a portion of the long process of the incus can be seen, the articulation itself being hidden. When this appearance presents, the next step of the operation is to pass the sharp-pointed knife between the descending process of the incus and the tympanic ring, carrying the knife inward until its point encounters the internal wall of the middle ear. An incision is then made downward, the point of the knife being kept firmly in contact with the bone, so as to divide these posterior adhesions. The incudo-stapedial articulation will then appear in the field of operation, being drawn forward by the unopposed action of the tensor tympani muscle. As soon as the articulation is clearly seen, it should be divided from before backward by means of the angular knife. Thus the stapes is freed from the other elements of the ossicular chain.

The hearing should now be tested, both for the whisper, the voice, and by means of tuning-forks, the latter being used to determine the lower tone limit. If quantitive audition is improved or the lower tone limit lowered, the operator is confident that the obstruction to the entrance of sound waves lies external to the oval window, and, therefore, that the hearing will be improved by the removal of the two larger ossicula and of the drum membrane. Before the operation is completed, however, it is wise to attempt still further mobilization of the stapes by dividing any adhesions which may be present between the crura of the ossicle and the inferior, superior and anterior walls of the oval nitch, and also to mobilize the little bone as much as possible by the use of a cotton-tipped probe. The probe, inserted so as to lie just below the head of the stapes, is pressed upward gently but firmly, so as to raise the ossicle as it lies in the oval nitch. The probe is then applied above the head of the stapes, and the bonelet pressed downward. By applying the cotton-tipped probe successively in front of the ossicle, pressing backward, and behind the ossicle pressing forward, more complete mobilization is obtained. From time to time the hearing should be tested to determine the result of these various manipulations.

If improvement in the hearing results, or if the lower tone limit is lowered by an octave, the operator is warranted in completing the operation, that is, in removing the two larger ossicles and the membrana tympani. To do this, it is usually necessary to apply more cocaine through the opening in the drum membrane. As large a pledget of cotton as will pass through the opening, is wound upon the probe, saturated in cocaine solution, and passed through the perforation in the drum membrane. This is held in position for a few seconds and pressed gently upon the internal wall of the middle ear, so as to fill the anterior part of the tympanic cavity with the cocaine solution. In this way, complete anesthesia of the middle ear is obtained. The drum membrane is next punctured at its inferior pole by means of the sharp-pointed knife. The blunt-pointed knife is then introduced and the anterior attachment of the drum membrane divided from below upward to a point just above the short process of the malleus. The edge of the knife is then turned in the opposite direction and the incision extended upward and backward from the original point until it reaches the exploratory myringotomy wound. The knife is then carried into the upper portion of the exploratory myringotomy wound and the incision carried forward and upward across the neck of the malleus, joining the anterior incision already described. The membrana tympani is thus entirely freed from all attachment and the malleus hangs suspended by the external ligament, the superior ligament and the malleo-incudal capsular ligament. By means of the sharp myringotome introduced in a direction upward and inward, just above the short process, the cutting edge being first directed backward and then forward, the external ligament of the malleus is completely divided. The ossicle is then grasped by a pair of stout forceps just above the short process and is pushed inward and then pulled downward and outward and the ossicle extracted from the canal. The next step is the removal of the incus. The canal is first thoroughly dried with a cotton pledget, and more cocaine applied, if necessary, in order to retain perfect anesthesia. If the hemorrhage is troublesome at this stage of the operation,—and it frequently is sufficiently profuse to interfere with a complete view of the operative field,—the introduction of the adrenalin solution, either upon a cotton-tipped probe or by means of a narrow strip of gauze saturated in this solution, and packed quite firmly into the canal, will thoroughly control the bleeding. The incus is next sought for by means of the incus hook. This instrument is introduced into the tympanic cavity with the curve looking forward and after its angular portion has disappeared behind the tympanic ring, it is drawn outward until its further outward passage is prevented by the *annulus tympanicus.* The hook is then carried upward and at the same time, rotated forward. This manipulation in almost every instance, will result in bringing the long process of the incus into view. If the first effort is unsuccessful, the manipulation can be repeated until the long process of the incus is seen. The ossicle is then grasped with a pair of forceps, pulled downward and outward and extracted from the canal. In cases of chronic non-suppurative otitis, the extraction of the incus presents practically no difficulties, as there are seldom any adhesions between the body of the incus and the adjacent walls of the epitympanic space in which it lies. It should be remembered that no operation is complete unless the incus is extracted. If the ossicle is allowed to remain, adhesions may form between the long process and the stapes which will entirely vitiate the results of the operation.

After the ossicles have been removed the field of operation is dried with cotton pledgets, the outer portion of the canal resterilized with bichloride of mercury and a strip of sterile gauze carried into the tympanic cavity through the canal. This gauze should not be packed in tightly, but inserted simply to insure free drainage from the middle ear after the astringent effects of the cocaine and adrenalin have worn away. The strip of gauze is cut off short and buried, so to speak, in the meatus; the entrance to the canal is then closed with a pledget of sterilized cotton. The patient is instructed to change this outer pledget of cotton as often as may be necessary, but not to interfere with the strip of gauze in the canal. This strip is left for about 24 or 36 hours, and is then removed by gentle traction. This manipulation must be done delicately, as, if the gauze is removed roughly from the canal, there is apt to be some bleeding into the tympanic cavity, which is liable to interfere with the success of the operation. The subsequent treatment of the case is simple. The canal is sterilized daily with an alcoholic solution of bichloride of mercury and after each sterilization a pledget of sterilized cotton is inserted deeply into the canal, so as to prevent any infection from without. The entrance to the canal is closed with a second pledget of sterilized cotton, which the patient is allowed to change as often as it becomes moist. The ear is dressed daily until the discharge ceases. If asepsis is carefully preserved, the discharge never becomes purulent. A serous discharge persists for a period of from five to ten days after the operation, at the end of which time the ear will be found perfectly dry. When the discharge has almost disappeared, it is well to dust a little boric acid over the internal tympanic wall, in order to hasten the drying process. As the discharge decreases in amount, the inner pledget of cotton may be omitted altogether and the patient may be allowed to leave out the outer pledget while he is in the house, replacing it whenever he goes out of doors, the object of the outer pledget being simply to prevent infection of the middle ear from without.

It has been stated that this operation is of practically no value, in that the membrana tympani will invariably return, if removed. From my own experience, I can say that this is not so. In many of my cases,—I cannot give the exact proportions—the membrana tympani, after removal, has not returned. In certain other cases, it has returned once; and less frequently a second time, after the second removal a large permanent opening has remained. In a very small proportion of cases I have been obliged to remove the membrane a third time, but I have never failed in a single instance, to ultimately secure a permanent opening.

I have described in detail the typical procedure where the hearing is found improved during the operation. In cases where an exploratory tympanotomy is undertaken, in the forlorn hope of improving the hearing, and where no such improvement results after mobilization of the stapes through the exploratory opening, it is unwise to proceed with the operation. If the surgeon, on account of the particular topography of the parts, is unable to assure himself that he has secured perfect mobilization of the stapes, I believe he is justified sometimes in completing the operation in order to gain room to thoroughly mobilize this ossicle. The ultimate results in cases when the mobilization prior to removal of the malleus and incus has not improved the hearing, are usually so unsatisfactory that it has been my almost invariable practice to close the opening in the tympanic cavity immediately after the exploratory operation if this has been followed by no benefit. The flap of drum membrane is put back in its original position and the strip of sterilized gauze inserted into the canal. When this gauze is removed, if there is but little discharge, a disk of sterilized paper is fitted over the surface of the drum membrane so as to completely cover the flap and hold it in position. Owing to the retraction of the tissue forming the flap, the margins of the flap do not approximate themselves to the surrounding membrana tympani, and this paper support greatly facilitates healing. Sometimes the serous discharge from the middle ear is so great as to render it impossible to apply this paper dressing until one or two days after the operation. If the parts are kept thoroughly sterilized, however, this dressing can be applied in the course of a few days and left in position until it is cast off by the outward growth of the dermoid layer of the membrani tympani, and when the paper comes away, the wound in the drum membrane will be found to be thoroughly healed, with a minimum amount of cicatricial tissue. Unless infection takes place, the ear is left in as good a condition as it was before. This remark applies to those cases in which there has been no previous labyrinthine involvement. In certain instances where an exploratory operation has been done, in which there was slight labyrinthine involvement, the condition after operation was not as good as it was before.

Coming now, to those cases in which the operation is performed for the relief of suppuration, and in which the effect upon the power of audition is a secondary matter, certain variations in the technic of the operation present which are perhaps worthy of mention. In the first place, the proper selection of cases is of importance. The surgeon must decide before advising the operation of ossiculectomy for the relief of otorrhea whether the intratympanic caries is limited or extensive. If the caries is limited to the ossicular chain and to those parts of the tympanic cavity which can be reached by instruments introduced through the meatus, operation through the canal is the procedure of election. Where, from the character of the perforation and general appearance of the parts, the history of the case and the information gained by the careful use of the probe in the tympanic cavity, the operator is convinced that the suppurative process has extended into the mastoid antrum, it is unwise to advise the procedure of ossiculectomy, these cases demanding the radical operation. In doubtful cases, where the hearing in the ear is good, and where there is no involvement of the labyrinth, the surgeon may be tempted to advise ossiculectomy as a preliminary procedure, giving the patient to understand that at a later period it may be necessary to do a radical operation. Where, however. the hearing is very much impaired in the affected ear, and where the hearing on the opposite side is good, all cases of extensive suppuration should, I believe, be treated by the radical operation, rather than by the more conservative procedure of ossiculectomy. Ossiculectomy, then in cases of caries is applicable to those cases where the carious process is limited in extent, or to those doubtful cases where the hearing in the suppurating ear is very good and the radical operation threatens the patient with a decided diminution in the hearing power. The technic in these cases must depend largely upon the appearance presented upon examination. The first step should always be to free the stapes from adhesions and then to divide the incudo-stapedial articulation. The subsequent extraction of the ossicles can then be effected without danger of injuring the stapedio-vestibular joint or the labyrinth. The same general plan of freeing the malleus must be followed in these cases as in the non-suppurative cases. Particular stress is to be laid upon the necessity of removing the fragment of the incus remaining in these suppurative cases. Many of the operations reported have been unsuccessful in controlling the suppuration for the simple reason that the operator has contented himself with removing the malleus alone, and making a rapid search for the incus. As we all know, this ossicle is the one most frequently affected in intratympanic caries, and a small fragment of this ossicle remaining after the operation is sufficient to cause a continuance of the suppuration. The incus should therefore be most carefully sought for in the manner already described. Where this ossicle has not been found by means of the incus hook, it is wise to remove the upper and posterior portion of the inner extremity of the bony meatus, by means of the cutting forceps, in order to gain free access to the tympanic vault and displace the carious incus which may lie hidden there. After the two larger ossicula have been removed, thorough curettement of the tympanic cavity should be done. The atrium is easily curetted by means of the sharp, straight curette. For the tympanic vault, however, angular curettes are necessary. This curettement should be thorough, and no softened bone should be left. It is also important to carry a small fine curette well into the Eustachian tube, removing all granulation tissue in this region and thoroughly denuding the lining membrane of its superficial epithelium near the tympanic orifice. In this way, the Eustachian tube will frequently be occluded by cicatricial tissue and the subsequent infection of the tympanic cavity from the nasopharynx will be avoided. Attention should also be paid to the margins of the tympanic ring. The entire circumference of the *annulus tympanicus* should be scraped with a sharp curette in order to remove all remnants of the membrana tympani and favor a complete dermatization of the tympanic cavity. After thorough curettement, the canal should be packed rather firmly with a strip of sterile gauze, and the meatus occluded with a pledget of sterilized cotton. This strip of gauze may be removed at the end of 24 or 36 hours. The field of operation should then be wiped dry with pledgets of sterile cotton. At the end of 48 hours after the operation, it is well to sterilize the entire operative field with an alcoholic solution of bichloride of mercury of a strength of 1 to 3,000. The parts may be subsequently dusted with boric acid or xeroform. The meatus is then occluded with a pledget of sterile cotton, the patient being reminded to change this pledget as often as it becomes moist. The patient should also be warned against the possibility of infecting the discharge in the canal, if the pledget is changed when the hands are not thoroughly cleansed. Directions should therefore be given that the hands be thoroughly washed before changing the pledget of cotton in the ear.

Where, at the time of operation, the intratympanic adhesions have been very firm and considerable hemorrhage has resulted, there will be a rather profuse serous discharge from the canal for, at least, two weeks after the operation. It is frequently wise, therefore, in these suppurative cases, at the end of three days after the operation, to allow the canal to remain open, and to direct the patient to irrigate the ear about three times a day with a solution of bichloride of mercury, of a strength of 1 to 5,000. The patient should be seen at least every second day, and better still, everv day, and the parts carefully sterilized by the surgeon, in the manner already advised. The length of time that the discharge will persist after these operations, varies greatly in different cases. It may be roughly stated that the discharge will cease at the end of one to three months after the operation.

It is impossible to go more minutely into the details of after-treatment. It goes without saying that if exuberant granulations appear during the course of cicatrization, they must be treated either with the fused bead of nitrate of silver or with some similar chemical caustic. In properly selected cases an operation of this character will be followed either by complete cure or by a very marked decrease in the amount of discharge. Even in those cases where a slight discharge persists after the operation, the establishment of free drainage removes all menace to life and with but trifling inconvenience on the part of the patient, the ear can be kept in a perfectly satisfactory condition.

Regarding the danger to life, the operation may be regarded as absolutely free from any such possibility. The facial nerve may, of course, be injured in attempts at removing the incus, unless the incus hook is kept closely applied to the margin of the tympanic ring while its curved extremity is within the tympanic cavity. The facial nerve may also be injured by the cutting forceps in removing the upper and posterior margin of the tympanic ring unless care is taken to hook the forceps firmly against the ring, and to exert traction upon them while the blades are being closed. If this is not done, when the blades of the forceps are approximated, the blunt extremity of the instrument may be driven forcibly against the *Aqueductus Fallopii,* and if its wall is unusually thin, the canal and underlying nerve may be injured.

A very rare accident is injury of the jugular bulb in curetting the power part of the internal tympanic wall, or injury to the internal carotid artery when the curette is used in the Eustachian tube. The former accident has happened to me in one instance, and in that case the patient ultimately developed a thrombosis of the internal jugular requiring excision of the vein; this patient made a complete recovery. So far as I know, tht carotid artery has never been injured in this operation, although its proximity to the Eustachian tube should be borne in mind, and the curette should be used with the utmost gentleness.

The chief difficulty in performing the operation is the occurrence of hemorrhage. Before the discovery of adrenalin the only method which we had to control hemorrhage was to firmly pack the canal either with small pledgets of cotton or with strips of sterile gauze. This method is perfectly competent to control the hemorrhage, and if either the tampons or the gauze strip are left in position for a few seconds, the field of operation will be found to be fairly dry upon their removal. It is necessary to repeat this procedure, however, from time to time, in order that all manipulations may be carried on under ocular inspection, as the field rapidly fills with blood. Since the discovery of the hemostatic properties of adrenalin, it has been my practice in all of these cases to firmly pack the canal with a strip of gauze moistened in a sterile solution either of adrenalin chloride, 1 to 5,000, or of suprarenal extract, whenever there was sufficient hemorrhage to interfere with the operation. The use of the moist tampon in this way certainly controls the hemorrhage very perfectly, and shortens the time of the operation. Where the operation is undertaken for the relief of suppuration the thorough curettement of the tympanic cavity naturally precludes the possibility of this operation being performed under local anesthesia. A general anesthetic must, therefore, be administered in operating upon these cases.

Last of all, we come to the consideration of those cases in which there is a slight discharge present, or in which the patient is suffering from the results of a former purulent inflammation, that is, *otitis media purulenta residua.* Ossiculectomy is undertaken in these cases primarily for the improvement of hearing, or the relief of subjective symptoms, such as tinnitus and vertigo. It must be remembered that in a large number of these residual cases, the removal of the ossicular chain is not necessary, and that the surgeon frequently obtains brilliant results by the simpler procedure of freeing the stapes from all adhesions by dividing the tense bands which may have developed between the crura of the ossicle and the walls of the oval nitch, and also by dividing the incudo-stapedial joint, if this has not already been destroyed. These cases of synechiotomy lie beyond the limits of this paper. In certain cases, however, it is impossible to liberate the stapes absolutely without removing the two larger ossicula and the remnants of the drum membrane. The same rules indicating the advisability of this procedure in chronic non-suppurative otitis, apply to these cases of residual middle ear suppuration, in which the operation is undertaken for improvement in the function. No good result can be obtained unless bone conduction is either normal or increased, the lower tone limit considerably elevated, and the upper tone limit practically normal.

The technic of the operation is essentially the same as already described in the non-suppurative cases, modified, however, by the location of the perforation in the membrana tympani. In cases of complete cicatrization of the drum membrane, the procedure is identical with that laid down in the non-suppurative cases. The first step in the operation should invariably be the exposure of the incudostapedial joint, the division of adhesions about the stapes, and the division of the incudo-stapedial articulation. In many cases of this class the remnant of the drum membrane is very thick owing to an increase in the connective tissue layer, and we sometimes find calcerous deposits in the fibrous layer of the membrana tympani. This thickening of the drum membrane naturally increases the difficulty of the operation. The procedure in these cases can, however, be almost invariably conducted without the employment of a general anesthetic.

Coming now to the results of these various operative procedures, out of 88 cases of chronic nonsuppurative otitis, operated upon for the improvement of function, 76 cases were improved, 10 were unimproved, one grew worse after the operation, and in one the result was unknown.

In those cases operated upon for the relief of suppuration, out of 92 cases operated upon by the author for the relief of suppuration, 53 were cured, 25 improved, two were unimproved, and in 12 the result was unknown. The effect upon the hearing in those cases operated upon for suppuration has not been accurately determined in every case. In most of the cases, however, the hearing was improved, and I do not now recall a single instance in which the hearing was made worse.

In nine residual purulent cases, in which the two larger ossicles were removed for the improvement of hearing seven have been improved, one unimproved and one case is still under treatment. Of course, most of the cases of this character are operated upon by synechiotomy of the stapes which falls outside the province of the paper.

THE DISCREPANCY BETWEEN CLINICAL MANIFESTATIONS AND PATHOLOGICAL FINDINGS IN APPENDICITIS.*

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ORDINARILY appendicitis is easily recognized. Few diseases manifest more characteristic symptoms. It is not the purpose of this paper to discuss the differential diagnosis, but rather to consider the manifestations of the disease at the bedside, and compare them with what we find on the operating table. Our text-books tell us that there are catarrhal, ulcerative or gangrenous, and perforative forms.

It is generally assumed that the so-called catarrhal form shows its acuteness in the first 24 hours of illness, during which period the constitutional symptoms reach their height, and the local manifestations become pronounced. During the second day there is some subsidence of acute symptoms, while the absence of serious manifestations usually assures the medical attendant that the case can safely rest under so-called conservative (or perhaps better named) "let alone" treatment. Most practitioners depend to a great extent upon the constitutional manifestations. The pulse and temperature are closely watched. If neither is high it is assumed that the patient will get well without surgical aid. In many instances not enough attention is paid to local signs. How easily one can be misled by adopting such a course can be seen by studying the following case: N. B., seen at his home in East Syracuse, June 10, 1901, with his physician, Dr. Chase. The boy was ten years old, and had been compelled to leave church the day before, as he had been suddenly seized with nausea and vomiting, and pain which he referred to the umbilicus. There was no rise of temperature. The colic was pronounced. With the aid of an enema the bowels moved. Vomiting persisted until midnight. On the morning of the second day the bowels moved freely, but the pain shifted from the umbilicus to the right iliac fossa. There was marked tenderness at the McBurney point. With all this the temperature remained normal during the entire morning. At 3 o'clock in the afternoon when I saw him his pulse was 88, and temperature 99.8° F. But the local signs in the right iliac fossa were very acute. I urged operation because of the pronounced local manifestations, despite the absence of constitutional disturbance. On exposing the appendix it was found to be nearly half an inch in diameter, distended with pus, and contained fecal concretions. Its free end was gangrenous, and a point close to the cecum was so thin as to require very careful manipulation to prevent rupturing it. The interesting point was, that a piece of omentum had wound itself around the base of the appendix constricting it so tightly as to shut off the circulation and cause the rapid gangrene. There were no protective adhesions, and evidently in a very few hours the case would have been converted into one of general peritonitis. The operation was done 27 hours after the first manifestation of the disease.

As opposed to this condition, I had occasion recently to report a case in which there was very pronounced constitutional disturbance, and where during the first 24 hours the temperature ran to 104.5° F., the pulse to 132, while the local signs were not so pronounced. In this case we found upon operation that we had to deal with hemorrhage into the substance of the appendix.

Many times cases present mild symptoms during the first 24 hours, and suddenly without warning they become very acute and even alarming. An excellent illustration of this condition of things was presented in the case to which I was called Sept. 29, 1898, by Dr. Heffron. During the first day of sickness there was no marked constitutional trouble. The highest temperature recorded was 100.5° F., and the pulse rate had not gone above 90. The patient was a boy of fifteen years. On the afternoon of the second day there was a sudden chill, the temperature rose to 104° F., the pulse rate to 140 to 150. Pain became agonizing. Persistent vomiting of a green, watery substance set in. The tenderness was greatly increased. And yet, after a free evacuation of the bowels the intensity of the local symptoms was much lessened. We operated upon him that night. At the time of operation the temperature was 103.5° F., the pulse 156. We found an infected mass of omentum, a gangrenous appendix two inches in length, sharply bent upon itself, a perforation at the point of constriction; with all of the exposed intestines covered with a diphtheritic exudate, and a large quantity of thin sero-pus in the free peritoneal cavity.

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* Read before the Syracuse Academy of Medicine, December 2, 1902.

In another case, seen with Dr. Wynkoop, in January, 1899, a young man of sixteen years had been sick one day, but the symptoms were so mild that no physician was called. At the time of our consultation he had a moderate amount of fever (101.5° F.), and a pulse of 116. There was rigidity of the right side of the abdomen, exquisite tenderness at the McBurney point; the left side was quite free from pain. However, the patient did not suffer so badly but that he was able to go to the bath room. We were hardly prepared to find an advanced appendicular and peritoneal inflammation. The appendix was ulcerated. The cecum was plastered over with exudate, while the lower part of the abdomen was filled with thin sero-pus. With each displacement of a coil of intestine there was a fresh gush of pus. In the subsequent history of this case, the extensive peritoneal involvement was apparent in the number of adhesions which formed, and the occurrence of intestinal obstruction.

The improvement usually evident on the second day in the so-called "catarrhal" appendicitis, may often lead to a feeling of security which the real condition by no means warrants. The temporary amelioration of symptoms is not always the expression of an actual improvement in the condition. On the morning of Oct. 5, 1901, I saw a child six years of age with Dr. Levy. He had presented on the day before evidence of appendicitis. I saw him at 9 A. M. on the second day. His temperature was 101° F. The local manifestations had greatly improved. There was but little rigidity of the abdomen, and I was able to exert a great deal of pressure over the site of the appendix without causing the patient to flinch. His pulse-rate was 114—not a high pulse-rate for a nervous child. Both the parents and the attending physician were satisfied that there was marked improvement in the case. I saw him again at three o'clock in the afternoon. There was no aggravation of local symptoms whatsoever. His temperature still remained 101° F., but the pulse-rate had increased to 126. Taught by experience that the aggravation of any manifestation in the course of an attack of appendicitis means progression of disease, I advised immediate removal of the patient to the hospital for operation. There was some delay in his transfer. At half past seven, on his admission to the hospital, the pulse-rate had risen to 180, but the thermometer still registered a temperature of 101° F. The abdomen continued to be flat. There was no marked rigidity. We were entirely unprepared to find as we did upon incising the abdomen, that it was filled with thin pus. While irrigating the abdominal cavity his pulse became so flickering in character that it could hardly be counted. He began to vomit a dark brown material; the pupils dilated; and his breathing had to be maintained artificially. The appendix, four inches in length, was in a state of necrosis, and had a perforating ulcer at the cecal end.

It seems to me that no condition may be more difficult to recognize, or have its seriousness more completely masked, than that which is present soon after the rupture of an appendix, and when general peritoneal infection has just occurred. The constitutional condition may be quite undisturbed, or at any rate, the presenting symptoms may be very mild.

On April 14, 1898, I was asked to see an attorney, forty years of age, by his attending physician, Dr. Loomis. Five days before, the patient had taken a long bicycle ride. The following day being Sunday, he attended service. He had some abdominal pain on this day. It was not until the 11th inst., namely, three days before our consultation, that Dr. Loomis was asked to see him. There was then some vomiting, and a slight elevation of temperature, the highest for the day being 100° F. It was on this day that the local manifestations first suggested appendicitis. On this and the following day the bowels moved freely. The temperature did not then go above 100° F. The rigidity of the abdomen seemed lessened. On the day prior to our consultation, a little bloating occurred, but it was not attended with increase of pain nor rise of temperature, while the pulse-rate was not above 90.

When I entered his room at noon on April 14, he was bolstered up in bed at work on a brief, so mild was the discomfort which he experienced. His temperature during that day had varied from 98.5 to 99.5° F.; his pulse was slightly irregular and 96; but the respirations were 40. The abdomen had become suddenly greatly distended. There was general rigidity of the abdomen not particularly marked at the right side. He was suffering less pain than he had been. The most alarming manifestation was a persistent hiccough with which he had been troubled the entire morning. Moreover, the bowels had not moved that day. So thoroughly did the general peritonitis mask the signs of appendicitis that I had to depend entirely upon Dr. Loomis's history of the case for an explanation of the origin of the trouble. The local symptoms stamped the case as being so exceedingly serious that Dr. Heffron was asked to see him with us. The peritoneal cavity was found filled with sero-pus; the distended intestines were deeply injected; the appendix was gangrenous and broken down and was perforated close to the cecum.

It is not my desire to multiply experiences of this kind, but as this is by no means an isolated example it seems to me that I should emphasize the marked difference in the patient's feelings, and the serious pathological conditions we frequently encounter in this disease. I shall therefore ask you to bear with me while I refer briefly to a few additional cases of this kind.

On Oct. 7, I was called to Elbridge to see an unmarried woman, fifty-one years of age, at the home of her nephew, Dr. Kapel. She had

had for a few days some mild symptoms of abdominal disturbance, but they had not been sufficiently severe to interfere with her going to Auburn on a visit, and indeed she had only returned from that city the evening before. Upon her return to Elbridge she had a temperature of 100° F. and a pulse of 96. During the night she suffered considerable pain; vomited some; and her abdomen began to bloat. She had been given a mercurial cathartic, and with the aid of an enema had a very free evacuation of the bowels. She felt more comfortable after this. She did not complain of any particular point of pain, but insisted that there was quite as much tenderness on the left as on the right side of the abdomen. The abdomen was considerably distended and hard, yet I was satisfied that I could map out an area in the right iliac fossa where, on percussion, a duller note was emitted than could be obtained elsewhere. I advised operation. On entering the abdominal cavity evidence of a general peritonitis was present. A quantity of sero-pus was found. The cecum was deeply engorged. In the right iliac fossa I succeeded after considerable difficulty, in locating an exudate and bringing to the surface the appendix, which was embedded in a mass of infiltrate. Its tip was gangrenous and pus oozed out of a perforation at this point.

A third case illustrates the difficulties in determining the existing condition. This patient, a young woman seventeen years of age, was seen ten days ago in consultation with Drs. Alfred Mercer and Miller. She was profoundly sick and impressed one at once with the seriousness of her condition. Here the difficult problem was to determine the cause of the peritonitis. For nearly a week her abdomen had been greatly distended and firm. Her complaint in the beginning was altogether of pain in her left side. Until within 48 hours the bowels could be moved with the aid of purgatives, but since then evidences of intestinal obstruction presented themselves. There was persistent vomiting, the ejected material being black and foul, as well as complete inaction of the bowels. I was able to make out a very slight difference in the degree of rigidity between the two sides of the abdomen—that it was greater on the right side. I believed also that I could detect a difference in the percussion note over a limited area in the right iliac fossa. The tympanitic note was modified, as though the distended bowels lay over a firm substance. When this patient was operated upon by Dr. Miller, we found a perforative appendicitis, with three distinct openings in the appendix, large fecal concretions, a necrotic condition of the cecum at the point of origin of the appendix, and the bottom of the pelvis filled with a large quantity of foul-smelling pus.

About as obscure a case as one would be apt to encounter was sent in to St. Joseph's Hospital yesterday afternoon by Dr. Werfelmann, and operated by me at my clinic soon after admission. An Italian woman, 22 years of age, married, the mother of a fifteen-months-old child and now five months pregnant, was well until nine o'clock of the morning before. At this hour she was seized suddenly and without previous warning with intense pain in the right iliac fossa. She had always been a robust woman, of florid complexion. Dr. Werfelmann could not be reached, and the condition being urgent, Dr. Fischer was called to see her. Morphine was administered hypodermically and salines internally. She vomited some. The temperature was normal, but the pulse rapid. Later Drs. Fischer and Werfelmann examined her together. The manifestations were not positively characteristic of any particular condition. The question whether an extra-uterine pregnancy had not ruptured, was seriously considered. Yesterday morning the abdomen became generally rigid and the pain was most pronounced on the right side. The bowels failed to move; temperature continued normal; the pulse rapid, the urine scanty.

I saw her about half-past two in the afternoon. Her rectal temperature was 98.8° F., her pulse 130. Her face was pale; and her expression indicated great suffering. The abdomen was very hard; right-sided tenderness was acute. No other physical signs could be made out, as the pregnant uterus reached above the level of the umbilicus. Pelvic examination was negative. My examination was made in association with Drs. Werfelmann and Miller. It was decided to operate at once. Under the anesthetic the abdomen became much less tense. The usual incision for appendicitis was made. Upon opening the peritoneal cavity there was at once a gush of thin pus. Some of the intestines were deeply congested. The right ovary and tube were inflamed. The former was covered with an exudate. The appendix was found to be extremely gangrenous. The suddenness of the onset, the immediate reference of the pain to the right iliac fossa, the persistent absence of fever, the general abdominal rigidity without exaggeration thereof on the right side, and the inability to obtain any of the usual confirmatory local signs because of the existing pregnancy, combined to obscure the clinical expression of the pathological condition.

Sometimes we encounter cases in which all of the signs point to a localized disturbance, and yet the trouble is widespread. A young girl of fourteen years, whom I saw at the summer home of her parents, in Cazenovia, in June, 1898, had been sick but thirty hours. Her physician, Dr. Joy, had promptly recognized the trouble. Only twelve hours before my visit had the tenderness localized itself at the McBurney point. There was no general abdominal distension. The rigidity on the right of the abdomen was less severe than we ordinarily find it. The constitutional disturbance was marked, temperature being 103.5° F., and pulse 125. On opening the abdomen there was a free discharge of sero-pus from all points; the cecum was plastered with an exudate; the appendix, three inches long and bent on itself at an acute angle, presented gangrenous areas along its sides; its walls throughout were thin, ready to break through, while at the point of greatest constriction a perforation had occurred and a stream of thin fecal matter was finding its way into the free peritoneal cavity. It was estimated that fully two quarts of thin pus was present in the abdomen.

The obscurity of the early manifestations, in the presence of widespread involvement, was evident in a patient who walked into St. Joseph's Hospital October 27 last. His home was in East Syracuse. He had been sick for nearly four days. He had come from that village, riding the five miles in a street car, and had then walked up the hill to the hospital. He complained of some abdominal pain, and stated that it had been more severe on the preceding days of his sickness than on the day of his admission into the hospital. His bowels had moved on the 24th inst., but after this date neither fecal matter nor gas had been discharged. On the other hand he had for two days been vomiting a dark, almost black, fluid, with very foul odor. The abdomen was quite distended and felt doughy. There was slightly more resistance over the right than the left iliac fossa. With all this, the temperature was but 100° F. per rectum, and his pulse 90. His peritoneum was found darkly reddened and thickened. Thin pus began to flow out of the abdomen as soon as this cavity was opened. The intestines were greatly engorged, and at different points a nasty exudate could be seen. His appendix was very superficially placed, and had a perforation at its base.

In November, 1899, I was asked by Dr. Ruland to see a boy, twelve years of age who, after eating heartily of figs and grapes, had had an attack of colic. The pain was referred to the epigastric and umbilical regions. On the first day of the sickness he had no fever. On the following day I was called in consultation. His temperature was then 100° F., and pulse 90. The pain and tenderness were located to the right of the epigastrium and umbilicus. Their location suggested the existence of a cholecystitis. Slight pain was evoked on deep pressure in the right iliac fossa. I saw him twice on this day. He had several movements of the bowels. In the evacuations seeds and grape skins were found. During the following night the pain became more intense. He had more frequent movements of the bowels, and with each, more seeds and skins were discharged. In the meantime right-sided tenderness became more marked. A dull area, the lowest point of which was on a line with the umbilicus, could be made out. Temperature was higher—103.2° F., pulse 100.

The cecum was found adherent to the parietal peritoneum. At the point corresponding to that of greatest tenderness a plastic exudate was found upon it, but the appendix was discovered just below the free border of the liver, with its terminal extremity gangrenous for about three-fourths of an inch. It is evident that in this case the faulty position of the appendix was responsible for the unusual clinical manifestations. In another group of cases, characteristic signs are slow to manifest themselves. On Nov. 16, 1900, I was called to see a boy, aged sixteen years, who the day before had exposed himself to a cold, penetrating north wind without being properly protected. He was thoroughly chilled. The next morning he woke up with intense abdominal pain, subnormal temperature, and a rapid pulse. The abdomen was soft, free from tenderness. In the afternoon he vomited both food and bile. The pain increased and localized itself in the hypogastrium. The abdomen then became rigid, while the temperature came up to 99° F., and still later to 102.5° F. The bowels moved freely. The next morning the abdomen was softer. There was mild general tenderness of the whole abdominal surface, but most marked in the median line three inches above the pubic arch. There was no more vomiting. From then until the fifth day the pulse ranged from 80 to 84. Tenderness was persistently referred to the median line, or to the left of it, and not until the close of the fifth day was there the slightest suggestion of rigidity on the right side of the abdomen. I saw the patient personally twice a day and carefully studied the condition of the abdomen. On the sixth day there was a rise of temperature in the morning to 100.6° F. In the evening it reached 101.6° F. Right-sided tenderness was now positive, and dulness present over a limited area. On the following day I operated on this patient, assisted by Dr. Elsner, and incised a localized abscess in the appendicular area. The pus was creamy and of very foul odor.

The question often arises as to the exact character of the disturbance in the appendix in that class of cases in which the patient apparently makes a satisfactory recovery, but in which there are repeated recurrences. These cases are described in the books as chronic appendicitis. Operating upon these patients during the period which has improperly been designated as "the interval," one frequently encounters surprises. Parenthetically I beg to emphasize the thought that these are not interval operations, for we certainly do not expect these patients to have another attack of appendicitis after removing the appendix. That these cases are furthermore improperly considered to be catarrhal, that is, as presenting only evidences of inflammation of the mucous lining of the appendix, there can likewise be no doubt.

I saw a young woman, twenty-six years of age, on May 27, 1898, with Dr. Elsner. She had had a number of attacks so mild in character, and evidently so free from characteristic signs, that they had been regarded as gall-stone colic. Dr. Elsner, however, had seen her during the last two periods of sickness, and had made the diagnosis of recurring appendicitis. When I saw her she had recovered from an attack and had been free from symptoms for ten days. There could, however, be recognized a tender, thickened appendix. Two weeks later we operated upon her. In the meantime she had so fully recovered her health that she felt that it was almost absurd to submit to an operation. We found the appendix 1½ inches long, three-fourths inch in diameter. Its base was embedded in a mass of adhesions. As these were pushed away by gauze sponges, we exposed a perforation, and there was at once a free discharge of pus from the cavity of the appendix, whose dimensions immediately became smaller.

On Oct. 20, 1901, Dr. Slocum of Camillus sent a patient to St. Joseph's Hospital, who was thirty-two years of age, and who had had three previous attacks. At the time of his admission he had been sick for two days, and there was a recurrence of the usual manifestations. But as the temperature was but 98.6° F. and his pulse 100 on admission despite his ride of eight miles in an ambulance, and as there was but very slight tenderness, and no abdominal rigidity, at his request the operation was deferred. For ten days he was watched closely at the hospital. During this period all evidence of tenderness entirely disappeared. The pulse ranged almost continuously from 60 to 64. He never had a rise of temperature above normal, and yet when he was operated upon at the end of this period, a mass of omentum was found adherent to the cecum, separation of which opened a pus sac containing fully two ounces of pus, and exposed an appendix presenting a perforation at its base.

On Oct. 27, Dr. Moore referred to me a patient, twenty-five years of age, who, during the preceding four months had had four attacks of appendicitis. He had never been sick with any of them for more than a day or two, and at the time of our consultation the fourth attack had been of 24 hours' duration, and had followed a dinner at which he had eaten both cabbage and dates. Upon admission into the hospital his rectal temperature was 101.8° F., but in the course of four hours fell to 100° F.; and during the same period the pulse dropped from 96 to 64. Five days later we operated upon him. During this interval he had no fever, and a pulse rate as low as that referred to. All abdominal rigidity was gone. There was no longer any tenderness. A mass, however, could be felt, which upon being exposed was found to be an exudate adherent to the cecum, including omentum which had to be ligated in four parts, and in the depth of this mass an appendix which was distended and contained pus. The mass removed was three inches in its long and two in its transverse diameter.

But pus is not always found in this class of cases. We are frequently requested to remove the appendix in the complete absence of all manifestations, and have every reason to state at the completion of such operations, that there must have been at some time much more than a simple catarrhal inflammation. I have a long list of cases with which I will not weary you, in which the appendix was found bound down by adhesions, where the mesenteric glands were found enlarged; where the inflammatory process had been sufficiently widespread to lead to a kinking of the bowels or cause manifestations of intestinal irritation, recurring attacks of diarrhea, or producing the opposite extreme of marked constipation, amounting at times to intestinal obstruction. These conditions had in many instances persisted for years.

In obtaining their histories exceedingly mild attacks of appendicitis were often described, while frequently the symptoms had not been sufficiently characteristic to suggest to the medical attendant that there had been any appendicular inflammation. It is, I think, less often a source of surprise to the surgeon than to the physician, that apparently widespread abdominal mischief may have been going on for a long period without furnishing more pronounced external evidence. The peritoneum has a degree of resistance and tolerance which not only withstands disease, but is so often helpful to the surgeon in his operative work, that only a full appreciation of this fact can account for the frequently mild clinical expression of appendicular inflammation.

The purpose of this paper has been to call attention to the obscurity surrounding many of the manifestations of appendicitis. I am sure that I have only brought to your consideration a series of cases which every surgeon could easily duplicate. There are a rew thoughts, however, which we may read between the lines in studying these cases. First of all, we must not depend too much upon finding the so-called classic symptoms of the disease. It is evident that they are not always unfolded so that a positive diagnosis can be made early. Secondly, we are not to be misled by apparently mild constitutional manifestations. Third, local signs are to be regarded as more significant, and can be relied upon to a greater degree than can constitutional manifestations. Fourth, the persistence, and, most assuredly, the aggravation of any manifestation is to be viewed with alarm, and strongly suggests progression of the disease. Fifth, the diagnosis of catarrhal appendicitis, because of the apparently mild symptoms presented, is often unwarranted. The restriction of the inflammatory process to the mucous surface of the appendix without ulcerative destruction thereof at any point, is probably of infrequent occurrence. Sixth, true conservatism, if by that we mean the conservation of life, is along surgical and not medical lines in every case of progressing appendicitis. And finally, I believe that every case in which the diagnosis of appendicitis can with positiveness be made, demands surgical rather than medical care. It is simply a question as to when the surgical operation should be performed. As a rule, the early operation affords the most encouraging prognosis.

Cancer in London.—Statistics for the year 1902 show a slight decrease in cancerous affections in London. The number of those afflicted with carcinoma in some form has, however, almost doubled within the last fifty years.

THE TREATMENT OF TYPHOID FEVER.

BY G. WYTHE COOK, M.D.,
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Typhoid fever is perennial among us, so I deem it not inopportune to bring the subject of its treatment before the society at this period of its defervescence, that in any discussion that may be elicited the various experiences of different ones may be stated, and methods and results compared, so that all of us may gain at least a modicum of profit from the individual views and opinions expressed.

However fascinating and instructive it might be, it is not desirable nor necessary for the purposes of this paper, to go into the history of typhoid fever, but it is essential for its proper discussion to consider its etiology and pathology, and to take account of the concomitant symptoms incident to the disease.

The investigations of competent bacteriologists have shown that a special micro-organism, the *Bacillus typhosus*, is constantly present in typhoid fever. It is found in the lymphoid structures of the intestines, in the mesenteric glands, in the liver, spleen and other organs. It gains entrance to the body principally through the digestive tract, and most commonly in drinking water, but milk and other food may be carriers of the contagion. While there is no positive proof that the bacillus enters the body in any other way than through the alimentary canal, it is not improbable that it may. Frederick A. Packard in *Progressive Medicine*, March, 1902, says: "Since our ability to more definitely recognize the bacillus of Eberth by bacteriological methods, and clinically in certain cases to employ the Widal reaction as a confirmatory sign of infection by this organism, cases are constantly being reported where the infection of the organism has apparently occurred from some point beside the intestinal tract, such as the pleura, the bladder, and the lung." Generally the primary location of the bacillus is in the lymphatic tissues of the intestines, yet the fever, in all probability, is due principally to its growth in other internal organs of the body.

The pathological changes are a catarrhal condition of the small and large intestines—hyperplasia of Peyer's patches and the solitary glands, which, if resolution does not occur, progresses to necrosis and sloughing, and after the separation of the slough, the characteristic ulceration remains. The spleen and liver are invariably involved and the kidneys, respiratory and circulatory organs may be more or less affected. The necrosis and sloughing of the intestinal glands are a source of great danger by reason of the hemorrhage, or perforation that may ensue.

The treatment of typhoid fever was a subject for dispute among physicians while its etiology was unknown and only its gross pathology, as manifested in the intestinal canal, was recognized, but now, having a knowledge of its true causation and pathological condition, and recognizing that we have as yet, no specific remedy, I assume, and I hope I will not be considered impertinent in doing so, that no thoughtful, prudent physician will attempt to cure the disease with drugs, especially by the administration of such as are intended to render the intestinal canal aseptic. Even if intestinal asepsis could be accomplished it would be ineffective, since the cause of the disease has penetrated to organs beyond the reach of such remedies.

Numerous methods of treatment directed to the destruction of the bacillus have been suggested and some, for a time, gained a certain amount of popularity, but have finally been abandoned as inadequate to the purpose.

Absolute rest in bed during the entire febrile state and into the period of convalescence is necessary, and good nursing and a carefully regulated diet are of the first importance, and to that end a well-trained nurse, free from meddlesome propensities, is essential.

It is hardly necessary for me to say here, and I hope I will be pardoned for doing so, that the sick-room should be as large and airy as possible, the windows, or a window, being kept open day and night. The light admitted should not be too glaring and the bed should be kept smooth and clean, the sheets being changed daily. The body clothing and bed linen, immediately upon their removal, should be put into a solution of carbolic acid and afterward boiled. The evacuations from the bowels and bladder of the patient should be mixed with a solution of carbolic acid and allowed to stand for at least an hour before being emptied. Strict cleanliness, by daily sponging of the body with alcohol is required, for besides the comfort it affords it tends to the prevention of bed sores, but changing position from the dorsal to the lateral decubitus is also important in this respect. The mouth, lips and teeth of the patient *must* be kept thoroughly clean. Small quantities of water should be given, at short intervals. The hair of women, if deemed best not to be cut short, must be carefully combed and braided.

Some doctors leave these matters entirely to the nurse, regarding them as too trivial for their consideration. My apology for introducing them here is that I consider them of such importance as to require the careful attention of the physician himself.

Diet.—There is very general unanimity as to the dietetic management of typhoid fever patients. The doctrine of Graves, who said: "If you should be in doubt as to an epitaph to be placed upon my grave, take this: 'He fed fevers'"—is sound to-day. The only qualification is that the food shall be in such form as to be easily digested and assimilated. Typhoid fever is a protracted and tedious disease. The functions of the various accessory glands of the alimentary canal are impaired and nutrition is greatly disturbed, so that it is of utmost importance that the food should be carefully selected and prepared.

Milk is undoubtedly the best food, as it contains all the necessary elements in a liquid form. If given alone, three to four pints, diluted with ordinary, or lime-water, may be sufficient for twenty-four hours. It is necessary to examine the stools of the patient to see that the milk is fully digested. If there are undigested curds the quantity of milk should be lessened, and chicken, or mutton broth, or beef juice given. Peptonized milk may sometimes be given with advantage. Thin oatmeal or barley-gruel answers a good purpose in some cases, and albumin water, flavored with lemon, may be given with benefit. It is important that too much food be not given as excessive alimentation is likely to produce intestinal fermentation with tympany and diarrhea. With good nursing and careful regulation of the diet many cases may be safely conducted to recovery without the use of any drugs whatever. But the disease is one of great muscular exhaustion, and the heart muscle suffers with the others, so that in cases of enfeebled circulation, and the very large majority of them are of this class, I am in the habit of giving strychnine for its stimulating and tonic effect upon the heart muscle, nor do I omit to give brandy or whisky when indicated. Much care is necessary in the management of convalescence. The patient must be kept in bed for eight or ten days after defervescence and solid food should not be allowed until ten days after the subsidence of the fever. These precautions are made necessary by the fact that perforation has occurred as late as two weeks after normal temperature has prevailed. Indeed it happened to a patient of my own—a young man of twenty years, who had been walking about the ward for several days, when he was seized with violent pain in the abdomen. Perforation was suspected, and the surgeon on duty at the hospital, Dr. J. Ford Thompson, performed a laparotomy, and closed the perforation, but unfortunately the patient died.

What I have thus far said as to treatment relates more particularly to mild and moderately severe, uncomplicated cases. But there are certain fiercer conditions that require special consideration. I am an earnest advocate of, and firm believer in, the efficacy of hydrotherapy in typhoid fever. Under its use temperature is reduced, the mind becomes clear, restlessness is tranquilized, sleep is induced, and it has a tonic effect upon the circulation. It is a most valuable help. The manner of its application depends upon the judgment of the physician and upon each individual case. I have seen good results follow cold sponging, the cold pack and the full bath. More commonly I use the former method. Nothing is so effective and satisfactory for the reduction of high temperature as the application of cold water.

The meteorism which is so commonly present is best treated by the application of turpentine stupes, or enemata of turpentine or milk of assafetida. They failing, recourse may be had to the passage of a rectal tube. Charcoal sometimes affords relief.

In my experience constipation is more common than diarrhea in typhoid fever. For the relief of the former a simple enema, every other day, will generally suffice. For the diarrhea, if the movements are more than three or four daily, the diet should be even more carefully looked to than in ordinary cases, and thin barley-gruel substituted for the milk. If drugs become necesasry, opium is the main reliance. It may be given in suppositories, or by enema, or Dover's powder with bismuth may be given by the mouth.

Intestinal hemorrhage should be treated by absolute rest, the administration of full doses of acetate of lead and opium or the hypodermic injection of morphine, and the application of the ice-bag to the abdomen. The motions should be passed into the draw-sheet, so as to avoid as much as possible the moving of the patient. The ingestion of food should be refrained from for ten or twelve hours. Bits of ice may be freely given. In cases of threatened collapse, stimulants should be resorted to and subcutaneous or intra-venous injections of salt solution may be given to revive the failing circulation.

If perforation of the intestine should occur, no time should be lost in opening the abdominal cavity, finding the perforation and securely stitching it. Reports of results in this direction are most encouraging.

As has already been stated, the application of cold water has a most beneficial influence in quieting the nervous manifestations in typhoid fever, and the constant application of the ice-cap to the head has a soothing influence. For the exceeding restlessness that sometimes occurs Dover's powder with a small dose of phenacetine will be beneficial.

The management of convalescence has already been adverted to. It only remains to reiterate that the greatest care must be exercised in returning to solid food, and the patient must not be encouraged to leave his bed too early. The period of convalescence is one of great anxiety to the physician and it is frequently difficult to make the patient understand the necessity for abstaining from solid food when he is so ravenously hungry. But with a little management a sufficiently varied diet may be suggested that will keep him in good heart until the time arrives for the removal of restrictions.

Sleeping Sickness Spreads.—Upon the recent return to London of the Sanitary Commission sent by the English government to Africa for the purpose of studying this disease, they reported a widespread increase in the malady. It is feared that in its threatened extension to the coast it may reach Mombas, the port of the Anglo-Indian Navigation Company, in which event it would be but a question of time when the disease would be carried to India and other points. Everything points to the microbic origin of the affection, though the investigators are not yet in accord as to the pathogenic agent.

ASCEPTIC SURGERY ON THE NIGER DELTA.*†

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The following records the history of a case of multiple wounding of an individual, the result of fourteen gashes made with a machete, comprising: Amputations of both cheeks; lacerations of scalp and forehead; shattering of the left shoulder, requiring an excision of the outer half of the clavicle to be made; incised wounds of both hands, flapping the palms; and penetrating, incised wounds of the abdomen, allowing the protrusion of intestines enough to fill a pint measure. Happening in the bush, this patient walked ten miles before reaching assistance, and had completely recovered at the end of six weeks' time.

Sickley, a female, 22 years old, native of the interior of the Brass River district, one of the streams forming the Niger Delta, in the Niger Protectorate on the west coast of Africa. Coming under the native law of death at the hands of her husband for infidelity, the accused woman was attacked by him in April of the present year with a machete or trade knife (a native weapon obtained from another land, and comparable to an ordinary sharpened cheese knife). From the woman's story and the appearance of the wounds the assault had commenced with the injuries about her head. Elevation of the hands to protect herself was followed by opening gashes upon their palmar surfaces. A crashing blow, cutting entirely through the middle of the left clavicle and shattering the outer portion, felled her to the ground, and was followed up by slashes in the abdomen which opened the peritoneal cavity upon the right side. The woman, weltering in the blood flowing from her many wounds, was left for dead, but, recovering herself, she traced her steps through the bush, a distance of ten miles, to the village of Brass, where she was seen by Dr. Gussie Brown, the English medical officer of the district, who, while deciding that the case was hopeless, called Dr. Donnelly, of H. M. ship Sansu, as consulting surgeon. Upon an improvised operating table in a little hut the repair of the injuries was begun. The wounds were washed in a salt solution prepared from the dirt-bearing water of the Niger River. Iodoform gauze was the chief dressing and was packed in the wounds, which could not be sutured. Loss of blood had been considerable. Under anesthesia produced by a six-months-old 4-per-cent. cocaine solution the comminuted outer half of the left clavicle was removed when it was found that while the subclavicular artery had been severed the large vessels beneath had escaped injury. The intestines were washed and replaced, and rubber drainage placed in the ends of the belly wounds. The wounds of the palms, which were most painful, were sutured.

Recovery was prompt. During the first forty-eight hours the woman had slight elevations of temperature up to 100° F., and her bowels were constipated. Aside from this there was no deviation from normal systemic conditions. After having her wounds dressed the patient refused to go to bed, and from the beginning tended to all her wants unaided. For the first ten days the wounds were dressed every twenty-four hours, after which a "nigger dresser" took care of the patient until recovery took place. All of the sutured wounds healed by primary union. A matter of supreme importance to the woman during the progress of healing was the stiffness of her hands, to overcome which she was given a rubber ball and directed to squeeze it constantly. Discarding this she declared that if her canoe and paddle be sent for she could paddle and fish, and thus regain the function of her hands and be of use to her physicians. Complying with her request, the canoe and paddle was obtained from her former home, and she paddled herself and kept her benefactors amply supplied with fish, as well as recovered from impending anchylosis of the flexor tendons in her palms.

A condition of keloid universally developed upon the sites of the healed wounds, to the delight of the patient, and as they took fanciful forms, her beauty became thus doubly enhanced to the natives around her. A beauty dearly bought, however, for she, a pariah, is at the mercy of her lawful owner, who relentlessly awaits the fit occasion to take her life.

805 Madison Avenue.

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* Presented at the New York Academy of Medicine, November 10, 1902.

† For the facts of this case I am indebted to Dr. James F. Donnelly, of the Royal Army Medical Corps, on duty on the West Coast of Africa.

REMARKS UPON ADHERENT PERICARDIUM.*

BY GEO. MONTAGUE SWIFT, M.D.,
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It has seemed worth while to note that since 1886 eighteen cases of adherent pericardium have been under observation in St. Mary's Free Hospital for Children, so I venture to bring the subject to your attention to emphasize the statement that adherent pericardium is not a very unusual condition. Besides these eighteen cases I have also seen five cases in adults.

Two specimens were exhibited. It may be desirable to say that the children admitted to St. Mary's are between two and fourteen years. There are about 350 medical cases admitted each year.

What I have further to offer is an attempt to formulate such symptoms and signs as have enabled me in most of the cases to make a diagnosis of the condition during life. My point of view is simply that of the clinician, and I have no intention to present a complete review of the subject. To those wishing more complete information I suggest J. H. Broadbent's monograph and the article in von Ziemssen.

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* Read at the November, 1902, meeting of Section on Pediatrics, New York Academy of Medicine.

All our hospital cases have died, and most have had autopsies made upon them. The condition found in most has been similar to the specimens which I have shown you; there has been found an adherence to the chest wall and to the diaphragm of the outer surface of the pericardium, as well as a complete obliteration of the pericardial sac, the two inner surfaces having become agglutinated. In some cases there appears also to be a thickening of the serous surfaces below the diaphragm, notably over the capsule of the liver.

When an incision is made through this thickened pericardium it is found that the pericardium and cardiac muscle are fused together. The process appears to extend, in some cases, over a period of some years, and is an active, growing process. This appears to be the opinion of those who name the condition chronic indurative mediastino-pericarditis. In some of the cases at the autopsy the impression made upon one by the appearance of the heart is that of a fibrous bag, the heart muscle fibers apparently having been choked and replaced by a growth of connective tissue. This explains the fact that in these cases during life it had been recognized that cardiac stimulants definitely produced an unfortunate effect.

In some patients in whom there have occurred no external adhesions the pericardial sac has, however, been obliterated; one such case I remember where the heart itself had the appearance of having been compressed.

In the cases of long standing the appearance of the heart in the thickened sac is that of an enormous hypertrophy; whether this is really an hypertrophy brought about, as one would naturally suppose, by the necessarily increased effort on the part of the heart to do its work, or whether, as Broadbent suggests, it is merely an apparent hypertrophy because the pericardium has become adherent when the heart was in a state of dilatation and has prevented its return to its normal size, I am unable to decide. From the point of view of the clinician it is certain that the condition prior to death has been more that of a degenerated and dilated heart; degenerated it would seem, because the adhesions have compressed the nutritive blood vessels.

In many of the patients no valvular lesions have been present, but the presence of murmurs is explained when one sees, as in one of the exhibited specimens, how the heart is held open by its firm union to the chest wall. One other lesion which it has seemed to me is peculiar is the very great enlargement of the liver, greater, I think, than is present in cases of dilated heart due to valvular lesions.

Two of our cases, which we were able to study over periods of years, showed an enlarged liver as the first indication of beginning failure.

I have found references in the journals during the past few years to cases of a peculiar form of cirrhosis of the liver associated with adherent pericardium, showing that others have noticed the association.

In some of the cases where the pneumococcus has acted as the cause there have been found in the adhesions pus and fibrin. I am disposed to think that these cases pursue a rather different course than do the rheumatic cases; they seem to occur earlier in life, one of ours being two and a half, one four years old.

Etiology.—The larger number of cases have been caused by the rheumatic poison. It would seem as though such a condition as that exhibited must be due to repeated attacks of pericarditis or to prolonged irritation by the rheumatic poison. Some have been due to the pneumococcus acting either directly upon the pericardium, or as a complication of a pleuro-pneumonia; none have been observed due to tuberculosis.

Symptoms and Signs.—The symptoms are those which are due to a dilated heart. I should say that hearts with adherent pericardia are unusual in the marked irregularity (turbulency) of their action, both as regards rhythm and force. In three adult cases attacks of dyspnea and apprehension of death were marked symptoms several months before death.

Physical examination shows a bulging of the left chest; in some cases where the sac is obliterated but is not adherent to the chest wall there is no apex beat; in the cases adherent to the chest wall there is a large area of diffused impulse in place of an apex beat, and in many cases, when the heart is acting vigorously, a readily recognized drawing in of the intercostal space or spaces with systole. I have not seen this occur posteriorly, as has Broadbent. I believe this is what is meant by Broadbent's sign.

To palpation there is a heaving, rubbing feel, as though the heart was acting with considerable effort, but a definite friction fremitus is not clear. Percussion dulness is, of course, present over a large area.

Upon auscultation one hears double murmurs over base and apex; sometimes the sound is that of mitral regurgitation. A sort of double sound in the locality of the third interspace and near the sternum has frequently suggested to my mind the presence of an adherent pericardium. When it is seen in the heart exhibited how the mitral valve is held open and that in the fresh state it permitted the passage of three fingers it will be understood that the murmurs were loud and of uncertain character.

Another important sign is the very great enlargement of the liver, reaching sometimes below the line of the umbilicus; with improvement of the heart this enlargement quickly diminishes.

To sum up the points for a diagnosis of adherent pericardium I should say the one of first importance is the knowledge that such a condition exists not infrequently; the great irregularity of action, the patient not appearing as ill as the great irregularity of heart action would indicate; the indraw of the intercostal spaces with systole, the marked dyspnea and consequent apprehension, the great enlargement of the liver with or without ascites.

Prognosis.—In the hospital cases the prognosis has been invariably bad, all cases having died, and within five or six years from the time the diagnosis was first made. In private practice I know one case in which an attack of pericarditis occurred in 1886; this gentleman, now about thirty-five years old, rides across country freely and without embarrassment, except that now and then he overtaxes his heart and then has to lie by for a period of reparation. Three other cases in which the diagnosis was made before death had been under observation for periods of over twenty years, and during that time no illness had occurred which would have been likely to have caused a pericarditis. A laundress at the hospital worked for eight years from the time of my first observation of her; the date of the causative attack I never knew.

It would seem as though the prognosis might be fairly good if the patients can have what I think is the most essential thing in treatment of cardiac disease, and that is an abundance of nitrogenous food to supply the extraordinary development the heart demands; especially is this the case in a growing child; and secondly, if the adhesions which have formed do not pinch too closely the nutritive vessels, inducing atrophy; again, the prognosis will be good if one can arrest the rheumatic state, or constant rheumatic poisoning; this is most difficult, particularly in the class of children from tenement houses.

Case I.—Annie, first admitted February, 1895; six years after an attack of rheumatism; came to the hospital because of cardiac disease. Discharged improved at end of month. Readmitted after three months with an attack of vomiting, dyspnea and palpitation and inability to lie down. Improved enough to go to the Branch Hospital at Rockaway, but was worse there and returned to the hospital. During autumn another attack of dyspnea and palpitation. Kept on rheumatic mixture. In 1896 a note of physical examination says there is marked bulging of the sternum on the left side. Apex in fifth interspace, axillary line. Superficial veins enlarged; some retraction of the sixth and seventh interspaces with systole. Impulse diffused. At apex a wheezing, systolic murmur transmitted to the left and heard behind. First and second sounds muffled; similar at base; blowing murmur heard all over chest, front and back. Cardiac dulness one inch to left of mammary line and to right border of sternum. Liver palpable below the free border of the ribs. Well, nourished, anemic, heart action regular.

May, 1897, went to Noyes' Home, Peekskill, in fairly good condition. Readmitted March, 1901, after a period of nearly four years, with an attack of acute bronchitis; heart condition about same as in 1896. Discharged at the end of two weeks. Readmitted in December, 1901; discharged at end of month. Readmitted within a week, January 30, 1902, with much dyspnea, palpitation, irregular heart action, loud blowing, murmurs. Died at the end of six weeks from an attack of pneumonia. Heart exhibited no valvular lesion.

Case II.—R., first attack of rheumatism with what was thought to be endocarditis in 1897; admitted for third time July, 1897. General condition poor; anemic; feet and ankles painful; choreic movements. Apex in sixth interspace in nipple line; systolic murmur transmitted to left and posteriorly; heart's action rapid and tumultous. Discharged much improved after a month at Norwalk. Fourth readmittance, March, 1899. By this time the apex beat was noted as in the seventh space, one inch to the left of the nipple line; musical, systolic murmur heard at apex, transmitted to left; apparently a reduplication of sounds at apex; heart's action tumultous. Discharged improved August 26, 1899. Readmitted fifth time November 21, 1899. Has been fairly well up to about one month ago, when palpitation and dyspnea returned, and she has been gradually getting edematous; ascites. Bulging of precordial space. Heart's action tumultuous; apex, seventh space one inch to left of nipple line; systolic murmur at apex transmitted, also a double sound over sternum, precordial dulness much increased; after tapping liver, found to be much enlarged. By January, 1900, she was able to be about and remained in fair condition until March, 1900, when there was a slight failure, causing edema of the lower extremities and ascites. In April was going about the ward assisting nurses. Went to Norwalk in June and returned in September in very good condition. To Peekskill in October. Sixth time readmitted after stay at Peekskill in November, 1900, fairly well nourished, anemic.

There is marked bulging of the cardiac region; marked, diffused impulse over whole lower cardiac and hypo-gastric regions. Apex at about seventh interspace just internal to axillary line. Sort of rubbing fremitus upon palpation. Systolic murmur loud and musical; also a sort of double sound over precordium. Liver much enlarged, lower edge on line with umbilicus. Has albumin and casts in the urine. Has general edema. From this condition she did not rally and died December 30, 1900.

HYOSCINE IN THE TREATMENT OF MORPHINISM; ITS OFFICE AND VALUE.

BY GEORGE E. PETTEY, M.D.,

OF MEMPHIS, TENN.;

MEMBER AMERICAN ASSOCIATION FOR THE STUDY OF INEBRIETY; MEDICAL DIRECTOR, DR. PETTEY'S SANITARIUM FOR THE TREATMENT OF ALCOHOL AND DRUG ADDICTIONS, ETC.

In the Medical News of Oct. 18, 1902, Dr. T. D. Crothers and Dr. J. B. Mattison each publish a letter in which they condemn the use of hyoscine in the treatment of morphinism. Dr. Mattison denounces the drug in strong terms, but does not give any specific data upon which his opinions are based. He seems to be so wedded to his idol, his sedation-substitution method, that he cannot look upon any other method with even the slightest degree of tolerance. This is unfortunate, because one who has devoted the time to the study and treatment of these addictions that Dr. Mattison has, and who has the broad charity for these unfortunate victims that his writings show him to possess should have a more successful treatment for them than the one he advocates. He still pursues the same methods he has advocated for many years, and while these have doubtless given good results in his hands, this has been largely because of his skill in administering it and his tact in managing this class of cases. The results obtained with the Mattison method in the hands of others have not been satisfactory, and judging from the expressions of standard authors, the world is still without an acceptable treatment for morphinism, notwithstanding the fact that the Mattison method has been before the profession a number of years.

Dr. Crothers undertakes to give a specific statement of his experience with the use of hyoscine in a dozen or more cases, but he is extremely unhappy in that effort, as he is quite nonspecific. He says, "In each case delirium with hallucinations and delusions of a mild type began after the second or third dose of the drug was given and continued from two to four weeks." Now, are we to understand that the administration of hyoscine was continued during these two to four weeks, or are we to understand that only two to three doses of hyoscine were given to each patient, and that the delirium, etc., induced by these doses continued for from two to four weeks? If the former, then nothing unusual has happened, as no one familiar with the effects of hyoscine is surprised at one under its influence having mild delirium, hallucinations, etc., but if the latter view is to be taken; that is, that as a result of the administration of two to three doses of hyoscine in each of a series of twelve cases, a delirium, etc., was induced that lasted from two to four weeks, then I must say that Dr. Crothers has recorded an experience that no other man has ever had or ever will have.

That delusions, hallucinations, etc., should continue as long as the administration of hyoscine is continued, or at least until complete tolerance for the drug is acquired, every one would expect, but that such symptoms should continue for from two to four weeks as a result of the administration of two to three doses of this drug, is unreasonable. The effects of hyoscine are very little, if any, more lasting than those of other narcotics. The delirium, delusions, etc., from its use are of short duration.

In a series, now numbering nearly 400 cases, in which I have used this remedy, only in two or three cases has delirium or delusions of any kind been present as long as forty-eight hours after the last dose. Probably, in one case out of ten, such symptoms continue twenty-four hours after the last dose, but in fully 90 per cent. of the cases the mind was perfectly clear by the twelfth hour or earlier, and remained so thereafter. In many cases the delirium subsides by the fourth to sixth hour after the last dose.

Dr. Crothers further says, "As a substitute for morphine I believe it (hyoscine) to be more dangerous and uncertain than bromide of sodium. From the use of both of these drugs delirium and dementia are almost certain to follow." Again do we find him unhappy in his statement. If he means that delirium and dementia may follow the prolonged or habitual use of either of these drugs, then he is doubtless correct, but if he means that dementia will almost certainly follow, or is at all likely to occur, as the result of the proper therapeutical employment of either of these agents, for the length of time such remedies are needed in the treatment of morphinism, then he is again wide of the mark. Instead of causing dementia, each of these remedies has made a greater reputation in the treatment of insanity than any other two remedies in the materia medica. There is no authentically recorded case in which the proper remedial use of either hyoscine or the bromides has ever caused dementia or other lasting mental disorder.

In persons who have been taken off of morphine by the methods I advocate, that is, through elimination of all toxic and effete material as a primary step, and then the control of the acute withdrawal symptoms with hyoscine, the perfect recovery of all the mental faculties has been one of the most uniform and striking features. The physical equilibrium is regained at a wonderfully rapid rate, but the mental improvement is still more marked. The perceptive and reasoning faculties are bright and unclouded; the memory is completely restored. It is the universal testimony among my patients that they recall, accurately, any event with which they have been familiar. Some time since I treated a classical scholar who had used morphine in large quantities for fifteen years. He said that during most of this time he had hardly looked at a book and certainly had not thought of memorizing a quotation from one. The revival of his memory was so perfect and was such a delightful experience to him that he devoted much of his time to entertaining his fellow patients with long recitations from Shakespeare and other classical writers, which he had committed to memory in his schoolboy days twenty years before. He assured me that during the time he used morphine he was never able to recall connectedly any of these selections, but after completing the treatment, he had the ability to recall with perfect accuracy any selection he had fairly memorized, or event with which he had been familiar.

I recently discharged a lady who had used morphine five years. Within a few days after the completion of her treatment, she sat down to a piano and reproduced from memory difficult pieces of music which she said she had not played or even thought of for several years. In my experience, instead of hyoscine being dangerous to the mind of the patient, it does more to awaken and revivify the mental faculties than any remedy I have ever used. It certainly does not deserve to be brushed aside as a treacherous remedy, unfit for use and almost certain to be followed by dementia and death.

Hyoscine cannot be considered a substitute for morphine, and there is no reason for seeking such a substitute. Hyoscine is unfit for prolonged use, but with proper discretion and with proper dosage it can be as safely used as any other narcotic. It is certainly not more dangerous than atropine, strychnine, cocaine, and hundreds of other powerful agents in common use. To be safe, it must be used with the same discretion and forethought that is necessary to make the use of these remedies safe.

In my experience no remedy for any disease fills an indication more perfectly or gives better results than does hyoscine in the treatment of morphinism. The gradual reduction method of treating morphinism should be discarded as useless and even hurtful; the sudden withdrawal, without some agent to relieve the patient's suffering, is inhumane and dangerous. This leaves the rapid reduction as the only one of the old methods worthy of consideration, but in this the patient suffers so intensely and the result is so seldom a cure that it certainly cannot be regarded as a satisfactory or successful treatment. Any remedy or course of treatment that will rob the sudden withdrawal of morphine of its horrors of suffering and dangers to life should be regarded as a godsend to humanity. After the patient is prepared for it, the discreet administration of hyoscine accomplishes this result.

The painful symptoms attendant upon the abrupt withdrawal of morphine have a natural limit of a few days' duration. By the use of hyoscine these days may be passed in comfort, and the patient enabled to escape the nerve strain and shock that would necessarily have attended such an ordeal of suffering. *Hyoscine not only occupies, but fills, when properly used, as important a place in the treatment of morphinism as does chloroform or ether in the practice of surgery.* Its office is very similar to theirs. It saves the patient from indescribable suffering and renders the unsafe, impracticable and difficult, safe practicable and easy.

I feel that the length of this article should not be extended, but in view of the fact that a successful and humane treatment for morphinism is one of the crying needs of the day, especially so since such a large percentage of the members of our profession are helplessly in the coils of this enslaving drug, but believing that the plan of treatment I advocate is a vast improvement upon any plan heretofore known to the profession, and realizing that the discussion of such a question through the journals alone does not crystallize professional opinion as effectively as the importance of such a matter demands, I am constrained to make this proposition.

If the editor of any of our weekly journals or leading medical organization will appoint a commission of competent medical men who will observe and report the results of the treatment of a series of cases of morphinism, I will be pleased to treat ten or more cases under their observation, at a place designated by them, and then let them give the profession, in such detail as their judgment dictates, the remedies and methods used with the results as they see them. It occurs to me that the report of such a commission would place this matter beyond controversy, and if their observation and the results as they find them justify them in sustaining my contentions as to the merits of this treatment, their report would certainly be a welcome document to the profession. If the results were not such as to meet their approval, their condemnation would leave the profession to look elsewhere for a treatment for morphinism.

These unfortunate and wretched sufferers are certainly entitled to more consideration than they have been receiving at the hands of the profession.

THE SCOPE OF VAGINAL SECTION.*

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This discussion will be of value in so far as each participant states tersely the outcome of his personal experience.

It may be laid down as an axiom that he who has specifically trained himself to work through the vagina may accomplish more and with greater facility than he who has accustomed himself to work mainly through the abdominal incision, but the conclusion that the former thus secures better symptomatic and anatomical cure will not hold. It is freely granted that experience yields the deftness which will enable us to operate on any intrapelvic and on many intra-abdominal conditions through the vaginal section, but far too frequently attempts at what I would term *surgical legerdemain* result in incomplete and faulty work, and entail prolonged anesthesia with the immediate or remote effect on kidneys, heart and lungs. Such considerations outweigh the charges brought against the man who prefers to do his work through the abdominal incision, whereby not alone touch, but also sight, assists him in rapid work, in knowing work, and in complete work. Surely there exists a golden mean and may this discussion enable us to find it.

At the outset the vaginal incision commends itself for diagnosis. Thus, in those border-line cases of ectopic gestation not at all uncommon—where the symptomatology is so inexact that we feel impelled to defer operation and yet where delay may be fatal, an aseptically performed vaginal section carries a minimum of risk and a maximum of certainty as regards diagnosis. If we secure free blood or clots our line of action is clear, if we do not the woman has in no sense been harmed. Again, in pelvic pain of an obscure source where careful examination reveals no special lesion, through vaginal section we may examine by sight the uterine appendages and determine whether or not they are the causal factors of the pain. Similarly, through the same incision it is often wise to explore in order to determine the feasibility or desirability of attempting what I would term *complete* operation by the suprapubic route.

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* Remarks introductory to a discussion before the Section on Obstetrics and Gynecology of the New York Academy of Medicine, November 25, 1902.

A further scope of the vaginal incision is for palliative treatment. I have in mind now instances of old-fashioned pelvic abscess, mainly of puerperal origin, where the immediate indication is evacuation of pus and the establishment of drainage. Here the condition of the patient is often such as to contraindicate radical operation from above, aside from the fact that he is a wise surgeon who dreads flooding the abdominal cavity with puerperal (streptococcic) pus. In such an instance the posterior incision is only a step preliminary to abdominal section later when cure is aimed at and not palliation. Similar remarks apply to pelvic hematocele, except that if not suppurating and where the condition of the patient is good, the damaged tube and the broad ligament should at the same sitting be exsected from below or above, according to feasibility. Incidentally, of course, under this heading arises the question of drainage, and this, following nature's teaching, should be *downhill* through the vaginal section.

A final scope of the vaginal section is for curative purposes, and now I tread on debatable ground. The personal equation enters largely as a factor. One man dares to do much through the vaginal section and does it well, where another dreads to tread and bungles. The first has simply acquired from long experience that deftness which the other has not acquired or cannot acquire, perhaps because he is too old a dog to learn new tricks. Therefore it is that too often the outcome of a discussion, such as this, is that a number of expert operators by the abdominal route are paralyzed by the claims of an equal number of expert operators by the vaginal route when they contend that everything may be done through the vaginal section. I am willing to grant that almost everything may, but too often at the expense of the patient's life, too often at the expense of an incomplete operation. The honest, conscientious operator does not and should not strive to see how much he can accomplish through the vaginal incision, but rather should bear in mind that often the selection of the suprapubic route will enable him to work more rapidly and therefore minimize the dangers of prolonged anesthesia, and will also enable him to do more complete work and therefore be more likely to effect cure.

To sum up the matter in a nutshell, from the standpoint of my experience, I would lay down the following deductions:

1. *As regards tumors* (benign and malignant) unassociated with inflammatory pelvic lesions, if they can enter the pelvic brim they may be removed, and should be removed through the vaginal incision. Of course, thus, if the tumor be malignant we cannot perform the elaborate removal of glands which it has been claimed is desirable, but my experience with malignant disease of the cervix (whether operated upon from above or below) has been so uniformly unfavorable from the standpoint of recurrence that I am willing to include this class of cases in the category of those which may rightly be operated upon from below. Where, on the other hand, such tumors cannot enter the brim, while it is possible to drag down and cut out and gradually get out, I do not call this surgery, but poor butchery, and since I aim at the former I rule out this class from the scope of the vaginal incision. The same remarks apply to tumors surrounded by adhesions or complicated by pyosalpinx or ovarian abscesses. The posterior incision is a feasible route only where the welfare of the patient does not enter as a factor.

2. *Diseases of the Appendages.*—Whenever readily accessible and whenever adhesions to the neighboring structures may be separated without undue force, the diseased appendages should be, by choice, removed by the vaginal section. Whenever the aim is to perform plastic work on tubes or ovaries, as a rule the same incision suffices. So much for the general proposition. Specifically speaking, pyosalpinx or ovarian abscesses, especially if right-sided, are without the sphere of vaginal section, for the reason that not infrequently the vermiform appendix is also involved and must be removed, or adhesions to cecum or sigmoid or rectum exist and may alone be surgically treated from above. Obviously this rule may occasionally not hold where the vagina is capacious. Ectopic gestation, if unruptured and not adherent, falls within the scope of the vaginal section, otherwise I select the suprapubic route.

3. *Uterine Displacements.*—In view of the fact that in my opinion the symptomatology of uncomplicated uterine displacement is dependent on the amount of downward sagging of the organ and not on the mere version, I do not think these cases fall within the scope of vaginal incision. The uterus must be drawn up and held up and not merely fastened anteriorly to the vagina. Similarly, while elaborate vaginal incision and vaginal dissection may enable us to shorten the round ligaments by infolding or twisting, the injury to the pelvic diaphragm, which is necessitated, makes me reluctant to sanction the method. Furthermore, of necessity, the anterior vaginal wall is foreshortened, the uterine segment becomes adherent and in the event of pregnancy dystocia may ensue.

Where the uterine displacement is complicated by adhesions and therefore, as a rule, by diseased adnexa, the vaginal incision is useless from a surgical curative standpoint, although, where the operator is specifically expert in vaginal work he might succeed and not fear injury to intestines, rupture of pus sac, or do other imperfect, incomplete operation. Adhesions may be broken up through the vaginal incision and gauze can be packed, but new adhesions form even while the old adhesions high up remain. And so the last condition of the woman is worse than the first!

Such are the deductions I would draw from my experience. They are subject to change even as are all our views, owing to the inexactitude of our Art. At the present, however, I deem them worthy of the consideration of all who place the safety of the woman paramount to brilliancy of operation.

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MEDICAL PROGRESS.

MEDICINE.

Chronic Splenomegaly with Anemia and Myelemia.—Under this title, and with the desire to promote definiteness in the consideration of the heterogeneous group of splenomegalies, P. Emile-Weil and A. Clerc (Arch. Gén. de Méd., Nov., 1902) have gathered a number of cases characterized as follows: There is marked splenomegaly with or without hepatomegaly, and with neither ascites nor noticeable lymph-node enlargement. The anemia, often marked, is sometimes extreme; the spleen and the bone-marrow, and occasionally the liver and the lymph-nodes show more or less complete myeloid hyperplasia. The blood-lesions are constant, and consist of a marked abundance of normal or abnormal nucleated red cells, the presence of neutrophile myelocytes, and ordinarily a slight leucocytosis of ten to twenty thousand. The condition would seem to approach pernicious anemia on the one hand, and on the other, myelogenous leucemia. Its relation to progressive pernicious anemia is shown by the splenic hypertrophy, the changes in the red cells, the appearance of normoblasts and the clinical picture (hemorrhages, anemia, etc.), but in progressive anemia the splenomegaly is always less, the normoblasts fewer, there are no myelocytes, and there is moderate lymphocytosis. Myelogenous leucemia shows clinically a considerable splenomegaly, a grave anemia, and hemorrhages, with or without hepatomegaly; but there is a marked leucocytosis, while in the author's cases the leucocytes are always under 20,000. Moreover, in leucemia the granular basophile and eosinophile myelocytes are much more abundant, and the normoblasts are few in proportion to the leucocytes.

Lymphadenoma with Recurrent Fever.—Cases of long-continued pyrexia not due to tuberculosis, typhoid or septicemia, occasionally occur, and from their obscurity deserve consideration. Of interest, therefore, is the detailed account of such a case by H. T. Bewley and J. A. Scott (Dubl. Jour. Med. Sci., Jan., 1903). The patient, a man of thirty-five years, had had a mild attack of syphilis, had been much exposed in his work to the dust of grain, and his mother died of phthisis. In October, 1900, he lost appetite, developed a cough and had an afternoon temperature of 102°F. The pulse was 66 to 80, heart and lungs negative, spleen not enlarged, urine normal. The cough was mild, rather paroxysmal, and tended to end in retching. The Widal reaction was present in moderate degree. The attack lasted four weeks and there were two relapses each of ten days duration. He grew stronger and became fat, but had cold sweats, and soon again developed the fever. The sputum and urine remained normal, the blood showed 3,570,000 red cells, 1,500 to 3,000 white cells and 90 per cent. hemoglobin. All treatment, quinine, mercury, and arsenic, was ineffectual. He was apparently going to die, when the temperature fell, and in a week he was practically well. He took a long sea voyage, could walk three or four miles, and became very fat, but soon showed dulness, apathy and disinclination for exertion. A year after the onset his hemoglobin was 37.5 per cent., the leucocytes 6,000, and the red cells 3,725,000. On Dec. 2, 1901, he died. At postmortem, over the upper part of the pericardium, behind the roots of both lungs and behind the heart, lay a dense mass of large hard, gray-colored lymph-nodes, about 4 x 5 inches. Similar masses, though much smaller, were found in right pleura, the mesentery on the surface of the liver and through the spleen substance. In the intestine, Peyer's patches were almost wanting, but there were patches that seemed to be the scars of old typhoid ulcers. The growths, microscopically, were composed of fibrous tissue with a few cells between. Presumably this man had typhoid fever at the beginning, and then went on to the development of a lymphadenoma (Virchow's lymphosarcoma). The two extremes of this disease are the form with simply enlarged gland of which the normal structure is replaced by an overgrowth of cells, and the form with overgrowth of connective tissue fibers. In this case the paroxysmal cough ending in retching was probably due to the irritation of thoracic nerves by the tumors.

Appendicular Colic.—It is a mistake to deny the occurrence of appendicular colic caused by contraction of the wall of the vermiform appendix upon a calculus, though the initial pain of acute appendicitis or that of recurrent appendicitis cannot be ascribed entirely to the influence of a calculus, as other factors enter into its causation in those conditions, writes E. Camelot (Jour. Sci. Méd., Lille, Dec. 27, 1902), who deems it logical to believe that the muscular coat of the appendix exercises its contractive power for the expulsion of a foreign body as do the ureter and biliary passages. In illustration of this idea he cites the case of a young man who suffered daily attacks of intense pain in the right iliac fossa. The pain, which was unfavorably influenced or excited by walking and exertion, appeared suddenly like a colic, and subsided as that does. Aside from an obstinate constipation, the patient's general condition was excellent. A somewhat vague history was given of an acute attack occurring some years previously, and which had been ascribed to the appendix. Examination of the abdomen at first threw no light upon the affection, but as the manipulation proceeded, the patient complained of increasing pain, and under the examining fingers the appendix could be felt becoming tense, cord-like and painful to pressure; and as the pain subsided, the appendix relaxed, and no trace of it could be felt. This phenomenon was repeated several times during this and subsequent examinations; and the author believes it to be, without doubt, the manifestation of appendicular colic induced by palpation. Operation was proposed and accepted, and resection of the appendix revealed no indication of inflammation, and its lumen was perfectly patent; but within it was found a grayish fluid in which floated numerous stercoraceous granules, and five hard coproliths, none of which was larger than a lentil. In these the author finds the explanation of the patient's symptoms; the pain being the result of reflex spasmodic contraction of the muscular wall, provoked by irritation of the mucosa through fecal concretions; the contractions in turn causing agglomeration of the coproliths, so that they partly occluded the lumen, thus producing tension of the fluid within the appendix. Occlusion being only partial, however, the fluid slowly passed into the cecum, tension declined, and with it the colic subsided, till some other influence excited a repetition of the phenomena. Valvular projections, such as are frequently seen within the appendix, would account for the retention of the coproliths. Removal of the appendix, the author believes to have been justifiable in this case, for the relief of the patient, and in order to avert more serious trouble in the future.

Salol in the Treatment of Dysentery.—According to the experience of the military surgeons in the Russian Army, P. Mascaieub (La Sem. Méd., Dec. 31, 1902) the use of salol constitutes a very efficacious means of combating dysentery. This observer associated salol with opium and nitrate of bismuth, prescribing tablets, each of which contained the following: Salol, subnitrate of bismuth and bicarbonate of soda, each 0.30 grams; and powder of opium, 0.015 grams. If the disease is seen in its initial stage, he begins by administering a strong purge to the patient, preferring castor oil, and then he follows this up with three or four tablets like the preceding. At the same time he puts the patient to bed and insists upon an exclusive milk diet. If the disease is already several days old, he prescribes these tablets without the preliminary purge. By this treatment the pain and dizziness are always decreased, and usualy, at the end of a few days, the cells are normal.

A Means of Obtaining a Watery Preparation of Menthol.—On account of its insolubility in plain water, unless mixed with a large proportion of alcohol, menthol is comparatively little used as a rule, although it possesses therapeutic properties which are accurate and powerful, especially in antimetic action. Cresantignes, of Paris (La Sem. Méd., Dec. 24, 1902), has succeeded in obtaining a watery solution of menthol by making use of tincture of quillia-saporani, a tree growing in Panama, which is often used in the formula for making emulsions. The formula which this observer employs is the following: Menthol, 0.03 to 0.05 gram; tincture of quillia, 5 grams; neutral glycerin, 10 grams; and distilled water up to 125 grams. After solution of the menthol in the tincture, the glycerin is added, and then the water, a little at a time, stirring well after each addition to it. In this way is obtained an emulsion of light amber color, in which the menthol is suspended. It is well to avoid concentrated preparations, which produce the sensation of burning. It is therefore advisable to administer, according to need, a few teaspoonfuls at a time of the above potion. Gastralgia contraindicates the use of this drug. Cresantignes also used applications of menthol for frontal headache, prescribing as follows: Tincture of quillia, 10 grams; menthol, 0.15 to 0.30 gram; distilled water enough to make 155 grams. A compress is soaked with this preparation and applied to the painful spot on the forehead; at the end of four or five minutes the patient appreciates a cooling sensation and then is advised to take off this compress and substitute another, wet with plain water, and then alternate between the two until the pain disappears, which is usually after a few moments.

Methylene Blue in Enterocolitis.—Taking note of the fact that enterocolitis of the mucomembranous variety often attacks neuropathic individuals, T. Chechetelli-Ippolite (La Sem. Méd., Dec. 24, 1902) conceived the idea of combating this disease with methylene blue, which, during the last few years, has been exploited as a sedative in certain maladies of the nervous system, and which possesses also, as is well known, certain antiseptic properties. The experiment was instituted on a woman thirty-four years old, and afflicted with this disease for fully three years, and gave very good results. This observer directed the patient to take every day a pure milk diet of one per cent. methylene blue, and, in addition, four pills a day containing 0.01 gram of pure methylene blue. At the end of 20 days this treatment established an improvement in the patient and a cure was obtained by prophylaxis, abdominal massage and administration of tonics. It is now eight months since the patient was discharged from treatment as positively cured.

The Nomenclature of Malaria.—The status of malaria in regard to presenting it in an exact way is so well defined that the time seems to have come for more exact and rational nomenclature. Lieut.-Colonel David Bruce (Brit. Med. Jour., Jan. 3, 1903) suggests the following, viz.: malarial fever,—synonyms, ague; intermittent and remittent fevers, (*a*) tertian synonyms, *Hemameba vivax*, simple or benign tertian, (*b*) quartan synonyms; *Hemameba Golgii;* (*c*) crescent tertian synonyms; *Laverania Laverani*, estivo-autumnal fever, malignant tertian, tropical tertian, remittent fever. He would leave out the common terms of simple, benign, malignant, pernicious as being misleading and inexact, the so-called simple tertian being often more severe than the so-called malignant tertian. The term estivo-autumnal is obviously appropriate in Italy, but it occurs in other parts of the world as well. Koch suggested the term tropical tertian for the third variety, but here again the fever is found in temperate climates. Inasmuch as Golgi, who discovered that the parasite of malaria consisted of more than one species and Lavaran, who discovered the parasite in the beginning, have done so much to relieve human suffering, their names should appropriately be united with the new nomenclature. In those cases characterized by anemia, pigmentation, enlarged spleen, etc., where the parasites have disappeared from the blood, he would add the term "chronic malaria."

Paroxysmal Tachycardia.—This disorder, as is well known, is symptomatic of many organic diseases or functional disorders. Jos. O'Carroll (Med. Presse, Jan. 7, 1903) details the history of a case in which no organic disease could be detected, in fact where the condition seemed idiopathic. Physiology can help one but little in explaining these cases, nor is one able to understand how the normal heart-rate can be multiplied four times for hours or days together without apparent damage to the organ. His case was one of a governess, aged thirty-four, unmarried, whose personal and family history gave no information or clue whatsoever. Her attacks she described as follows: They commenced with dimness or loss of vision, then followed severe pain in the cardiac region. This lasted from ten minutes to ten or 20 hours, the shorter period being the more usual. There was no function to which the attacks bore any relation, occurring as often in bed as during violent exercise. Pulse rate often rose to 260 per minute. Digitalis, nitroglycerine, nitrate of amyl, chloroform, purgatives, dieting, all had been tried in vain. Faradism apparently reduced the length of the attack. It was not until she was put on mixed bromides that she seemed to improve, and under these, taken in small quantities, the disorder has entirely vanished. It seems rational to believe that these attacks were epileptiform in character, but unfortunately this leaves us about as much in the dark as we were before, except as to the indications for treatment. It may be that these cases are distinctly of the visceral type of epilepsy with very occasional cerebral extension, or possibly central epilepsy with cardiac convulsions as its peripheral manifestation. The cardiac pain being analogous to the soreness left in the muscles after an ordinary seizure.

Chronic Bilateral Parotiditis.—The literature of the parotid gland, so far as it concerns chronic parotiditis as a clinical entity, is exceedingly scant. Osler, Mikulicz, and Kümmel have each reported a few cases. Among 800 insane patients at the Philadelphia Hospital, D. SYMMERS (Am. Med., Jan. 31, 1903) has found five instances of bilateral chronic parotiditis. In one case the condition may be regarded a stigma of degeneration in connection with other signs, there being no evidences of syphilis or other disease. In the second case syphilis was regarded as the etiological factor. In the third, a history of influenza, quinsy, alcoholism, and probably syphilis was present and signs of nephritis and an apical tuberculosis were in evidence. Number four had an interstitial nephritis. In the last case a history of ulcerative laryngitis probably reveals the etiology. Each of these cases seemed to have several points in common with the others. All the patients were above thirty and mental cases; all exhibit more or less acceptable stigmata of degeneration; three are unquestionably syphilitic, and nephritis is present in all but one. Attention is called to the possibility of confounding this condition with symmetric hypertrophy of the masseter muscles, but the difference becomes apparent on mastication. The author believes that it is probable that syphilis, nephritis, and certain other morbid conditions are attended by the elaboration of irritant substances which bear a selective affinity for the structures of the parotid glands and that these substances may be found in the saliva. For a similar reason the prolonged use of such drugs as potassium bromide, iodine and iodoform, arsenic, antipyrin, mercury and salicylic acid might affect the parotids in the same way, since these drugs are eliminated in the secretion from these glands.

Creosotal in Pneumonia.—The carbonate of creosote has lately been largely employed in the treatment of respiratory diseases. Its value in treating pneumonia is commented on by J. J. PHILLIPS (Am. Therapist, Jan., 1903). He has devised the following scheme of administration, in the first year 4 to 15 grs. daily in four doses, up to the tenth year from 15 to 75 grs., and adults in xv, q. 3. h. It is preferably given in Aq. Menth. Pip. with the addition of glycerin and when the temperature becomes normal one-half the quantity may be given. In most cases, if seen early, the temperature falls in 24 to 48 hours. If the drug is withdrawn too early, *i.e.*, before auscultatory signs disappear, there follows a rise, and if the creosotal be continued sufficiently after the drop has occurred, then the apyrexia is permanent. The drug seems to have a powerful local action upon pulmonary lesions, especially in the early stages of consolidation. No bad effects on the gastrointestinal tract were observed and its antiseptic action also controls fermentation and decomposition in the bowel. The general condition also improves, as manifested in the clean tongue, better appetite and greater bodily comfort.

Diphtheria Antitoxin in Bronchopneumonia.—The antidiphtheritic serum has lately been successfully employed in other infective diseases. Its favorable action is thought by some to be due to a leucocytosis, which in turn produces an antitoxin, by others to its action as a stimulant to the protective powers of the body. J. O'MALLEY (Am. Med., Jan. 17, 1903) has used it in three severe cases of bronchopneumonia in little children in doses of 1,000 to 3,000 units. Defervescence by lysis occurred within 8 to 10 hours after injection and complete recovery was rapid. He has also used it since then in bronchopneumonias complicating the exanthemata and in scarlatina in which the anginal symptoms were pronounced and finds it a valuable therapeutic agent in cases otherwise beyond ordinary therapeutic aid.

Exercise in the Treatment of Tuberculosis.—The degree of bodily exertion to be allowed in any given case of tuberculosis still remains an important question in the therapeutics of the disease. The limits denoted by various men are very indefinite and PENZOLDT (Münch. med. Woch., Jan, 6, 1903) proposes in a discussion of the subject, a more sharply marked procedure. He believes that the methods usually prescribed are entirely too severe and often do not take into account the individual characteristics of the case. The first point is to know whether in a doubtful case more harm will be caused by rest or by exercise. Observation leads to the belief that an abundance of rest is less harmful than too much exercise. Patients that present during the day a rectal temperature of 38° C. should be treated in bed, but the latter may advantageously be in the open air. After all exacerbations of the tuberculous processes, absolute rest with avoidance of all unnecessary movements, should be insisted on for a period of at least two months. The condition of the pulse, respiration and temperature should be a constant guide. The latter is the most reliable, however, and should always be taken in the rectum, if possible, three to four times daily. He also suggests that patients free from fever, who are permitted to indulge in moderate exercise, have the latter followed by a taking of the rectal temperature. 38° C. will indicate that the exertion was too severe and must therefore be lessened.

Vaccinal Immunity.—In a series of eight cases A. BESSON (Jour. Sci. Méd., Lille, Jan. 3, 1903) successfully revaccinated two after an interval of a year and a half, three after two years, two after three years and one after four and a half years; and out of six patients who had had smallpox, vaccination was perfectly successful in one who had been affected with the disease ten years previously. He therefore draws the conclusion that while vaccinnation may, in the majority of cases, confer immunity for a period of time varying from five to ten years, immunity may be of very short duration in a certain proportion of cases; therefore, during an epidemic of smallpox, it is but a measure of prudence to submit to revaccination unless a successful vaccination has been performed a year prior to the outbreak.

Chylous Ascites.—A Case Due to Total Occlusion of the Thoracic Duct.—The illness of a patient observed by P. P. COMEY and W. W. MCKIBBEN (Bost. Med. and Surg. Jour., Jan. 29, 1903), began with a chill, pain in the right groin and leg, gastric disturbance, fever, general body soreness. In a day or so the right lower extremity became reddened and swollen, and had a caky feel. The swelling and redness extended across the abdomen and across the back and loins but did not affect the opposite limb. It resembled a general infection with localized cellulitis and looked as if the process would proceed to suppuration. A diagnosis of phlebitis was made. The fever and inflammation began to subside in a few days but the marked swelling and slight fever remained for a week. Eighteen days after the beginning of the first illness the patient experienced a sudden, severe attack of dyspnea and cardiac distress, relieved by hypodermic medication. The right leg remained swollen, but caused no inconvenience to the patient beyond that due to its size. Two and a half months after the first attack a second attack of chills and fever occurred, and the cellulitis now extended to the left shoulder, left arm and slightly to the left leg.

During this attack a paroxysm of dyspnea and heart failure again occurred. A month and a half later a third febrile attack occurred; the edema became general, breathing was labored and ascites became more and more pronounced. The abdomen was tapped, and instead of serous fluid yielded about seven quarts of pure chyle. An opening was left for drainage and about four quarts of fluid escaped in 24 hours. The discharge continued for four weeks when the patient died. Postmortem examination showed the thoracic duct which was easily found on account of its marked enlargement and induration. Microscopical sections of the duct at many different levels showed marked fibrous thickening of the wall; in many places the fibrous tissue had replaced the muscular, and at nearly all levels the duct was totally occluded. The left lung showed advanced fibrosis; chronic passive congestion of the spleen and liver were noted and no marked renal alteration. The report of this case is supplemented by a tabulation of 47 cases described by various authors during the past 200 years. In only 37 of these cases was the fluid strictly chyle.

Exaggeration of Reflexes.—A Diagnostic Sign in Carcinoma.—Cachexia is a symptom of profound intoxication. The nervous system is extremely sensitive to the action of toxins. Pernicious anemia is a typical dyscrasia in which the etiological factor is undoubtedly a toxin; and in this disease nervous manifestations are common and are due to degeneration of the posterior and anterolateral columns of the spinal cord, as well as to alterations in the peripheral nerves and in the brain itself. In carcinoma the nervous system may be the site of metastases, and it may also present degenerative changes not very different from those occurring in pernicious anemia. Having a knowledge of these changes, D. DEBUCK and O. VAN DER LIÑDEN (La Presse Méd., Jan. 3, 1903) have sought for a nervous symptom of diagnostic value, hoping to discover a symptom which would facilitate the diagnosis of carcinoma early in the course of development of visceral tumors. Negative results only were obtained from a study of motility, coordination, sensation, electrical reactions of nerves and muscles. But a study of the reflexes proved more gratifying. In a series of cases of cancer the tendinous reflexes were invariably exaggerated. The cutaneous reflexes were more variable, but frequently showed exaggeration, especially the abdominal reflex. Babinski's sign was not present. Exalted reflexes are not, however, peculiar to cancer, but are present also in sarcoma, or in any marked dyscrasia involving the nervous system. The diagnostic value of the sign in malignant tumor, according to the present authors, consists in the fact that it is present in the condition very early in the course of the disease, long before the presence of a palpable tumor renders the diagnosis easy. In chronic septicemia, in the cachexia of syphilis or tuberculosis or in pernicious anemia, the symptom is less prompt in its appearance, less pronounced and less constant.

Tarsalgia Among Adolescents.—Prolonged fixation of the feet, usually prescribed against tarsalgia, possesses inconveniences, and exposes the patient to anchylosis. In addition, at the end of the treatment, if the patient becomes active he notices his affection has returned. The weight of the body appears to deform again the vault of the arch of the foot, and to cause the pain. M. CORDON (La Sem. Méd., Jan. 7, 1903) tried bicycling as a means of encouraging a young girl afflicted with tarsalgia, after having provided her with plates, and having directed her to press upon the pedals, not with the toes, but with the flat of the foot. He was pleased to find that this patient could take long rides without the least deformity of the foot, footache, pain or other similar symptoms. A cure was obtained two months after this treatment was inaugurated. In a general way, therefore, this authority considers that bicycling is a rational treatment for tarsalgia. He argues that the vehicle may be used in such a way as to spare the arch of the foot, and at the same time to get the exercise necessary to improve the general health of the patient.

Appendicular Pain in Acute Lobar Pneumonia of Infants.—The statement made by Massalonza at the fourth Italian Pediatric Congress, that it is impossible to exclude appendicitis in cases of lobar pneumonia simulating that disease until typical pulmonary symptoms appear, is considered by O. COZZOLINO (Gazz. Osped., Jan. 11, 1903) an exaggeration of the difficulties which undoubtedly surround the diagnosis of such conditions. He holds, with Guinon, that in cases in which the pain is first referred to McBurney's point, a gentle, gradual depression of the abdominal parietes with the flat of the hand over this point, will not excite pain and the consequent defensive contraction of the muscles which prevents diagnosis of the presence or absence of tumor. Such a case came under his observation, which presented all the symptoms of an acute appendicitis; and while respiration was rapid and superficial, and a dry cough was present, examination of the thorax revealed nothing abnormal save a slightly harsh respiration at the base of the right lung. With gentle manipulation of the abdomen, commencing first upon the unaffected side, and distracting the patient's attention, the doctor succeeded in establishing the absence of resistance or evidence of inflammation at McBurney's point, though the pain was referred entirely to that locality. After the second day, the symptoms of pneumonia were clearly established, and the disease ran a typical course, though appendicular pain persisted with decreasing intensity till defervescence occurred. Cozzolino holds that this case illustrates the necessity of guarding against a premature diagnosis of appendicitis in such cases, and proves the value of gentle manipulation, as advised by Guinon.

Blood-pressure Observations.—The rusults of observations on blood-pressure in morbid conditions in adults have been made by J. B. BRIGGS (Johns Hopkin's Hosp. Bull., Feb., 1903). Two cases of cardiac disease are presented with broken compensation in connection with lesions of the mitral valve. The Riva-Rocci sphygmomanometer showed in one case abnormally low pressure, in the other it was markedly raised. In both patients there was a return to the normal under essentially the same treatment, digitalis, rest in bed and free purging. It seems, therefore, that the digitalis, as used clinically, is not bound to raise blood pressure. A large number of observations were also made on patients who were receiving stimulant drugs. The effects of alcohol by mouth were never marked, the total effect being depression. The primary rise is temporary and is probably reflex from gastric irritation. Strychnine, by hypo in moderate doses, caused a rise, somewhat delayed as compared with alcohol, but lasting longer. A similar rise, but more sudden and less permanent, followed digitalin. No depression, as with alcohol, followed either. Subcutaneous infusions of salt solution have no stimulant effect on the pulse, and as the fluid does not remain in the circulation, the writer believes that infusions are contraindicated in surgical and traumatic shock where the blood pressure is already low. Strychnine and digitalin seem to meet the first indications in shock. Blood-pressure observations should form the basis of the administration of stimulants.

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THE VICE OF CHEAP THERMOMETERS.

IF some one should ask us which is the more dangerous to the community, an unlicensed and uneducated physician or an unregistered and unreliable clinical thermometer, we should hardly know which of these two evils to prefer. Luckily the law can be invoked for the suppression of the quack; but it concerns itself not at all with the fickle thermometer, and consciously or unconsciously, nearly all of us are silent supporters of a highly vicious practice.

A prominent hospital in this city has scarcely recovered from the shock of a recent discovery made by the members of its house staff, namely, that the thermometers in regular use in its wards vary so much as to render valueless the temperature charts which well-trained nurses have been taught to regard as one of their chief responsibilities. It is a rude awakening, indeed, for a physician suddenly to be made to realize that he has been treating for fever, patients who have no fever, and that patients have been discharged as "cured," whose temperatures were far from normal. Think of the wasted energy of sponge baths and tubbings; of antipyretics used without due warrant; of fluid diets forced upon half-starved convalescents who longed for solid food and would have been all the better for it; of patients kept in bed and in the hospital when they might have benefited by freedom out of doors. These are no imaginary evils; they are errors actually committed, and errors which we have no doubt are being repeated to-day in many of our best hospitals, where every possible care is supposed to be lavished on patients. Is this the hospital management of which Americans are so proud?

In the hospital whose experience has been made known to us, actual tests of groups of thermometers used in the same wards and on the same patients, revealed differences too striking and too serious to be lightly passed over. In some cases these differences were as great as 2.5° Fahrenheit—variations wide enough to prove embarrassing in diagnosis and misleading in treatment. This intolerable state of affairs has existed apparently for a long time—the inevitable fruit of a policy which seeks to divorce economy and efficiency. The dangers of such a policy require no enumeration at our hands; and yet, having made inquiries at a number of hospitals in this city, we are convinced that so far as clinical thermometers are concerned, this is a policy which has many adherents. Good thermometers are costly; cheap ones flood the market, and the tide rises even unto the sacred precincts of hospital wards, where it drowns all decent regard for the patients' welfare.

It is not in hospitals alone that the vice of cheap thermometers has taken root. In the stock of the average drug store in this city will be found a small number of clinical thermometers reliably certificated, and a much larger number bearing certificates of doubtful authenticity or having no certificate at all. These latter represent the practice of private physicians and the public in the taking of temperature at home. Most of these thermometers are cheap, many of them are old, and all of them are unreliable, because even when they happen to be accurate we cannot feel sure of them and we are bound to question and perhaps to discount their evidence. We have been accorded the privilege of testing selections from retail stocks but we have found that variations of two degrees are not uncommon.

Here is a matter of vital concern to the profession and the public. The voluntary testing and certification of thermometers by recognized experts is a safeguard within the reach of those who are willing to pay for it. Inasmuch as this protection is so commonly neglected, however, the question may well be raised whether compulsory certification is not desirable. Meanwhile, it is evident that hospitals have adhered to a policy which is unscientific, demoralizing and inhumane. It is the duty of medical boards to see that the vice of cheap thermometers is banished from the wards under their control.

NEGRO SUPREMACY FROM A MEDICAL STANDPOINT.

There has been such a hue and cry in the lay papers of the last two months, arising from every section of the country, that a glance into the medical aspects of this melanophobia cannot be devoid of interest and should not pass unobserved. In the leading journals from the North and South there have appeared editorials of great acumen and power, but none seem as yet to have dealt, except in a superficial manner, with the race problem as seen from a biological, ethnological or medical standpoint.

One cannot intelligently answer the question whether the negro can take a place in the social and economic progress of the nation without being in possession of the main morphological differences between the Caucasian and the African, since these are the fundamental bases for mental and moral discrepancies between the races. That the negro more nearly approaches in body to the quadrumana or anthropoid apes is shown by the following points: The arm is abnormally long—in the erect position it often reaches the knee-pans and on an average exceeds that of the Caucasian by about two inches. The facial angle which is granted by all to have a definite ethnological bearing even if the function of the frontal lobes is still but little known, averages 82 degrees in the Caucasian and 70 degrees in the Black. Coincidentally with this is the fact that in brain weight the white man exceeds the negro by fully ten ounces—almost as much as he in turn exceeds the highest gorilla. Another point of difference anatomically is seen in the lower extremity—this is not so well developed as the white man's, the foot is broad and flat, the great toe prehensile and divergent, the heel often projecting so far backward as to merit the term "lark heel." Were it not for the fact of the very early closure of the cranial sutures, which indicates early maturity, who can say what might be the possibility of any precocious pickaninny, let alone nine millions of them!

It is needless, however, to dwell longer on the well-known differences which exist, or to urge that they demonstrate a distinct race of mankind and show conclusively in the negro an inferior type. Among the fair-minded this is axiomatic.

Some years ago we were all alarmed over the "yellow peril." Now the "black peril" confronts us. Of the first no less an authority than the Honorable Andrew H. Green has well said "It will take centuries to teach our Western barbarians that there is no such thing as national danger in allowing the influx from the Orient to be balanced by natural causes."

The late Professor Ogden S. Rood, of Columbia, in speaking of the racial problem as presented in the South, said in his characteristic and emphatic manner, "Why, man, how the devil can there be any question of superiority or inferiority between two peoples who developmentally are separated by a chasm of 20,000 years? It is more than absurd to suppose that a residence of a few generations with a superior race can possibly create a bridge strong enough to bear even a single black."

Along the same lines of thought, it is interesting to note what N. S. Shaler, of Harvard, says, in his lectures on the early development of man, "The mountains of the North rather than any intrinsic capabilities of the Caucasian, are responsible for the immense difference which exists between the white and the black man. Cradled in their natural fortresses, the peoples of the Southern European peninsulas were isolated and this isolation meant protection and a possibility to develop. In the great flat plains of Africa, however, individual and tribal development was impossible, because of the lack of natural protection for such development."

Eugene R. Corson, in his contribution to the Wilder Quarter Century Book, states that as a result of a most careful study of the census, and dependent upon personal observation in the city of Savannah, he is confident that syphilis, tuberculosis and alcoholism are making stultifying inroads on the modern negro, poor, weakened product, that he is, of miscegenation.

If the opinions of these eminent gentlemen pass unheeded, who can turn a deaf ear to the following conclusions of that great and moderate observer of men, Sir Spencer St. John,—(Hayti, or The Black Republic, 1889) "After a residence of over twenty-five years in this Island I am forced to the conclusion that the negro is incapable of holding an independent position. Hayti shows no sign of improvement—on the other hand, it is constantly retrograding and without external influence the inhabitants will soon fall into the state of the dwellers of the Congo."

If it be true, as some have perhaps well said, that the time is ripe for a recognition of the negro, in substance rather than in theory, earnest thought should be given by those who would liberally interpret our laws and they should be well versed in the opinions of such men of science as we have quoted. They must know and recognize that profound differences *do* exist—that one race is 20,000 years behind the other. They must know that ethnologically, physiologically, anatomically, the Negro and Caucasian must always be widely different. If the negro is advancing, which, thanks to the noble efforts made at Tuskeegee and similar institutions, he surely is, what, meantime, is the Caucasian doing? Advancing? Yes, with his pliant brain case, capable of permitting progressive development from birth to death, he is thundering ahead with a rush and a speed which no alien race can hope to follow.

Unless these facts are weighed in a true balance, bitter injustice may be done the South. It is no doubt true, as Corson assumes, that the irrevocable law of the "survival of the fittest" will wipe the negro away, but this will take centuries. There *is* a real and immediate peril, as the Senator from North Carolina has well said. Science, education, religion, philanthropy, may well focus their brightest rays upon it, and unless our leaders follow where these trend the South will surely suffer.

THE NEED FOR A NERVOUS HOSPITAL IN NEW YORK CITY.

In another column in this week's issue of the Medical News we print a letter from Dr. Frederick Peterson, President of the State Commission in Lunacy, addressed to Commissioner of Charities, Homer Folks, on the desirability of establishing a hospital for nervous diseases in New York City, and also a suggestion as to a solution of the problem discussed.

For some time the Medical News has been endeavoring to show that a special hospital for nervous diseases is not only a desirable thing but an imperative need. It is only within the last few years that it has been borne in upon the mind of the general practitioner that nerves are not a luxury of the rich, but the fiber of the common man's life. The list of nervous diseases that Dr. Peterson cites as requiring special treatment is found more frequently in the city's poor than among the specialist-paying patients. The way in which these patients are cared for at present is totally inadequate; not but what the ablest men in the city are on hand to diagnose their cases, but because there is no facility or convenience provided for their proper treatment. They are stowed away anywhere as though they were labeled "miscellaneous," and there is neither interest nor credit in the various hospitals connected with their cure.

Added to the need of special care for the patients at present suffering is the very great additional need of using the troubles of these same people for the enlightenment of the uprising generation of physicians. The recent enormous strides in neurology fill tomes, but there is probably no other class of diseases that needs more clinical material to illustrate the differential points of diagnosis. Therefore the present haphazard method of tucking a chronic case into any vacant corner is simply secreting and wasting clinical material which the student is in need of. There can be no more practical solution than that which Dr. Peterson suggests to the Hon. Homer Folks, viz., the congregating together of all classes of nervous diseases into one especially equipped building, with a neurologist as a superintendent, and with facilities for clinical studies for students.

We trust that the idea, through Dr. Peterson's forceful impulse and the Hon. Homer Folks' gift for organization, will take definite shape and soon become a reality.

EDUCATIONAL UNIFICATION IN NEW YORK STATE.

It is an almost daily occurrence for prominent physicians in the State to receive letters from leading practitioners in other States making inquiry as to the methods employed in New York whereby professional medical standards have been elevated and maintained. Those familiar with the facts invariably attribute the existing state of affairs to the efficiency of the Regents' Office.

While it is true that the State Society nominates the State medical examiners, it is equally true that the Regents do the actual appointing from among the nominees, that they conduct the examinations surrounding them by safeguards such as are entirely unknown elsewhere, that they are custodians of all the records, and, more than all, that they regulate and control the academic requirements of all those desirous of pursuing a professional career in New York State. It is fair to assume that were it not for the superior system of the Regents, most, if not all, of the boasted excellence of New York State ante-professional, professional and post-professional standards would long ere this have been discredited. If physicians had no thoughts or wishes in connection with the divorcement of politics and education their desire for a continuance of existing Regents' methods would be sufficient to impel them to come to the support of that body in the conflict which has arisen as between them and the State Department of Public Instruction. Being citizens as well as physicians it is fair to suppose that their reason for advocacy of a unification of State education under the guidance of the Regents is of a dual nature, and therefore doubly intense.

Writing on this subject, in a recent issue of the *Evening Post,* Dr. Nicholas Murray Butler says, among other things:

"The fact that the two State educational departments at Albany are again at loggerheads before the Legislature and the public ought to be a matter of grave concern to the people of the State. Antagonism and friction between the representatives of these two departments have existed for some years past, and from time to time their evidences have attracted the attention of the public. Those who are more intimately acquainted with the educational conditions existing throughout the State have known that this antagonism and friction are constantly showing themselves in ways injurious to the schools and their work. If the State had two Departments of Insurance, or two Railroad Commissions, or two Superintendents of Banking, it would not be long before one or the other of the separate administrative departments was abolished. There will be no permanent relief from the present unfortunate situation at Albany until the two educational departments are reduced to one, as should have taken place long ago. This simplification, or unification, as it is called, of the State educational administration, has been demanded for years by all the best and most disinterested authorities on education. It has been prevented, however, by the fact that the representatives of the two departments, while constantly professing a desire for unification in theory, have been most unyielding when the time came to agree upon a concrete plan for bringing unification about."

Education should be unhampered by political consideration, and educators should not be beholden to politicians and to political parties. The method of imparting wisdom possessed by an individual is not the asset of any political boss, nor should it ever become so. The best way to prevent this is to place the schools on a plane of independence and of permanency, and Regents' methods are best calculated to bring this to pass.

"The thing to be aimed at," writes Dr. Butler, "is the establishment of a single, efficient and non-political form of control of public education in the State of New York."

ECHOES AND NEWS.

NEW YORK.

Recent Bellevue Charges.—The utter falsity of recent Bellevue charges has been made manifest by the recent autopsy made on the body of Patrick Hunt, the details of which are here presented: *Coroner's office, City and County of New York.*—An autopsy performed on the body of Patrick Hunt, at 2178 Eighth avenue, on February 4, 1903, at 12 o'clock M., eight hours after death, by Philip F. O'Hanlon, M.D., Coroner's Physician, revealed: *External inspection of the body*—No marks of violence; rigor mortis fairly well marked; greenish discoloration in the right inguinal region over ascending colon. *Brain*—Brain marked edema; dura thickened and showing chronic pachymeningitis hemorrhagica interna; the formation of a number of sacculated hematomata; dura thickened and adherent to all parts of the calvarium. *Lungs*—Edema and congestion. *Heart*—Enlarged and dilated; beginning aneurism of the arch of the aorta. *Spleen*—Congested and soft. *Kidney*—Chronic Bright's Disease, granular in form. *Pancreas*—Congested slightly. *Stomach*—Some old catarrhal gastritis.

Cause of death—Cardiac hypertrophy and dilatation, beginning aneurism of the arch of the aorta. (Signed) PHILIP F. O'HANLON, M.D., Coroner's Physician.

To which may be added the statement of competent alienists, as follows: "We have carefully examined into the clinical history of the man, Patrick Hunt, and the evidence given by him of alleged occurrences in Ward 32, Bellevue Hospital, on the night of January 24, 1903. We have also read the report of the autopsy made upon the man Hunt by Dr. Phillip F. O'Hanlon. In our opinion the story told by Hunt is fantastic and impossible, and bears the marks of an insane imagination. The autopsy shows a condition of the brain and brain membranes found most commonly in insanity and in advanced alcoholism with deteriorated brains, and practically in no other conditions. We believe, therefore, that Patrick Hunt was insane or demented, and his story the delusion of a lunatic or demented alcoholic. (Signed) Chas. L. Dana, M.D.; Frederick Peterson, M.D.; Adolph Meyer, M.D.

Manhattan Dermatological Society.—The regular monthly meeting was held Friday, Feb. 6, 1903, Dr. L. Weiss presiding.

Dr. W. S. Gottheil presented three cases; one each of ichthyosis, acne varioliformis and Roentgen dermatitis. The first subject was a child of two years, well nourished and otherwise healthy. The exfoliation was especially well marked and of peculiar configuration, at the site of a recent vaccination. Dr. Gottheil asked whether these cases ever get well spontaneously and what was the members' experience with the sulphur treatment. Dr. Bleiman stated that the more severe types are persistent; the mild ones apparently get well owing to greater attention to the skin in adult life. Drs. Sobel and Oberndorfer agreed that spontaneous cure does not take place; mild cases are usually overlooked.

The second case (Roentgen dermatitis) was an adult of fifty years; a red, raw excoriated patch covered the dorsum of right hand about 3 x 5 inches in diameter; the excoriation was superficial; healing takes place at times, but is soon followed by breaking down of tissue. The condition began after a single exposure to the Roentgen ray for purposes of diagnosis; disease of metacarpal bone was found and operated upon; of significance was a lesion near inner angle of eye resembling a lupus erythematosus. Dr. I. P. Oberndorfer said that the hand lesion did not look tuberculous, although he would not classify it; if the X-ray produced the condition, why does it not heal in so long a space of time. The lesion near eye he called lupus vulgaris. Dr. J. Sobel likewise called the latter lupus vulgaris; the lesion on hand may have had some connection with the former bone lesion; its appearance, however, did not suggest tuberculosis. Dr. Bleiman agreed with the latter speaker; in addition he stated that a local obliterating endarteritis could account for failure of reparative process.

The third case (acne varioliformis) was in a male, showing the typical outbreak on face and forehead; Dr. L. Weiss suggested Finsen light therapy, which was also advocated by Dr. Gottheil.

Dr. A. C. Geyser presented a female, single, thirty-five years old; seven months ago noticed a growing tumor of right breast; pain slight; axillary adenitis after the second month but painless. The mass was globular in shape, stony, hard and non-adherent to underlying tissues, but adherent to skin only. Was X-rayed ten times; mass much reduced in size, movable and softer; nipple still retracted but less so than formerly. Dr. R. Abrahams said that retracted nipple, axillary adenitis and gradually enlarging tumor, establish the diagnosis of carcinoma; he advised immediate operation. Dr. W. S. Gottheil, considering age of patient and its stony hardness, calls it sarcoma and also advised against further temporizing with the X-ray. Dr. L. Weiss advised operation, whether the case was sarcoma or carcinoma; metastasis and its dangers should be fully considered; he would rely upon microscope for differentiation. Dr. Oberndorfer said early age did not exclude carcinoma; pain was a cardinal symptom; retraction of nipple was common to both affections. Its extreme hardness, rapid growth, little pain and adenitis in his opinion favor diagnosis of fibrosarcoma. Dr. Geyser stated that patient refused surgical interference; hence he resorted to the X-ray and would report subsequently.

Dr. A. Bleiman presented a child of eight years with a deeply excavated ulcer on tongue; when first seen two days ago its appearance strongly resembled a primary sore; result of local (non-specific) treatment changed the condition considerably so that diagnosis of simple lingual ulcer was made; a ragged-edged tooth no doubt was responsible for the condition, coupled with the lack of proper mouth hygiene. Dr. Gottheil considered it a traumatic ulceration dependent on dental caries, and like it, bacillary in origin. Dr. J. Sobel called it a non-specific dental ulceration, which was probably influenced by the same variety of bacilli which produce dental caries. The offending tooth must be drawn and the ulcer treated locally. He found five-per-cent. solutions of chromic acid effective.

Dr. I. P. Oberndorfer showed a case of primary syphilitic pigmentation. He called attention to the fact that these pigmented spots were not preceded by any eruption and distinguishes between a primary pigmentation and one which follows syphilitic exanthema. The patient was under observation since last September. At that time the body showed a papular syphilide and squamous eruptions on the palms. The upper eyelids presented a peculiar red, infiltrated, scaly eruption. The members present conceded the eruption to be a rare one; Dr. L. Weiss thought it an otherwise accidental pigment stain in a syphilitic patient.

Dr. R. Abrahams showed a case of lichen syphiliticus; patient had a chancre on penis 13 weeks ago; in this interval no signs of any secondary eruption until present outbreak. The lesion showed well on the lower limbs; the body and arms were scantily covered. Drs. Gottheil, Weiss and Abrahams considered it specially interesting owing to the long lapse of time between initial sore and the secondary lesion. Lichen syphiliticus was extremely rare, and when it did occur was not often recognized. Dr. Oberndorfer relates a case recently observed.

Plans of the Rockefeller Institute.—In last Saturday's News was announced that Dr. Simon Flexner, formerly of the Johns Hopkins Medical School, had been selected as chief of staff of the Rockefeller Institute for Medical Research. The plans embrace a scheme for an institution of medical and pathological research which, it is said, will be without an equal in this country and unexcelled in any country in the world. The gifts of John D. Rockefeller to the institute thus far, aggregating $1,200,000, are considered merely a beginning, and the understanding is that Mr. Rockefeller stands ready to finance the institution for any amount necessary to carry out the work. The institute will occupy four city blocks, in New York, between the East River and Avenue A and Sixtieth and Sixty-fourth streets. The present plans call for the immediate erection of a laboratory for investigation in all departments of medical research; the building of a hospital in which special groups of patients may be treated to develop new methods for the treatment of disease. Popular lectures and a new medical journal will also be established. Dr. Flexner will begin his work at the institute in July. He will spend the greater part of his first year in Europe, during the construction of the laboratory building in New York. This building will be started so as to be ready for occupancy October 1, 1904. As an indication of the character of the workers and the able supervision assured them in their work, the following list of heads of departments and their assistants are announced: Prof. T. M. Prudden, in Columbia—William Salant, M.D., and Clara Meltzer, M.D.; Prof. A. C. Abbott, University of Pennsylvania—Nathaniel Gildersleeve; Prof. Simon Flexner, University of Pennsylvania—F. P. Gay, M.D., E. B. Vedder and C. W. Duval; Prof. H. W. Conn, of Wesleyan—William N. Esten; Prof. F. G. Novy, of Ann Arbor—G. D. K. Hendry, B. S.; Prof. V. C. Vaughan, of Ann Arbor—May Wheeler, A.B.; Prof. W. T. Howard, Jr., of Western Reserve—Roger G. Perkins, M.D.; Prof. Theobald Smith, of Harvard—A. L. Reagh, M.D.; Prof. W. T. Councilman, of Harvard—E. E. Tyzzer and W. R. Brinckerhoff; Prof. H. C. Ernst, of Harvard—S. B. Wolbach; Prof. R. H. Chittenden, of Yale—Leo F. Rettger; Prof. Ludwig Hektoen, of Chicago—J. C. Friedman; Dr. J. P. Halsey, of McGill University, Montreal—P. G. Woolley, M.D.; Prof. William H. Welch, of Johns Hopkins—Dr. Fisher; Prof. C. A. Herter, of New York—A. F. Wakeman and A. N. Richards; Prof. A. E. Taylor, California—Clarence Quinan; Prof. E. K. Dunham, of New York University—R. A. Bebb, M.D.; Prof. Biggs and William H. Park, in Health Department Laboratory—Dr. Anna Williams.

Dr. Flexner will have under him directors of the different departments of chemistry, hygiene, preventive medicine, pharmacology, therapeutics, normal and pathological physiology and the study of bacteria and other microorganisms. All these will receive a compensation sufficient to retain them in the institute. Besides these specialists of national and even international repute there will be a class of workers whose associations will be less permanent. These will be termed fellows or scholars, to whom grants of money of varying amounts will be made. There will be thus a large corps of permanent, well-trained persons, whose entire time will be devoted to research work. It is expected also that provision will be made for voluntary independent research investigators who may wish to avail themselves of the resources of the Rockefeller Institute to work out their own special problems under such capable supervision as may be afforded them.

PHILADELPHIA.

Dr. Le Conte Appointed Surgeon-General of Pennsylvania.—Dr. Robert G. Le Conte of this city has been chosen to succeed Dr. J. V. Shoemaker as Surgeon-General of the National Guard of Pennsylvania. Dr. Le Conte, formerly a surgeon in the Navy, is connected with several of the local hospitals, and is one of the best known of the younger surgeons in Philadelphia.

Barbers Ask for Sanitation.—A meeting called by the National League of Barbers for the purpose of arousing public interest in the adoption of a bill by the legislature that will result in better sanitary conditions in barber shops, was held recently in this city. Among the provisions of the bill is one creating a board of examiners consisting of five barbers who must have been actually engaged in the business for at least ten years. The measure is supported by both journeymen and employers.

The Samuel D. Gross Prize—$1,200.—This prize will be awarded on January 1, 1905. The conditions annexed by the testator are that the prize "shall be awarded every five years to the writer of the best original essay, not exceeding 150 printed pages, octavo, in length, illustrative of some subject in Surgical Pathology or Surgical Practice, founded upon original investigations, the candidates for the prize to be American citizens." It is expressly stipulated that the competitor who receives the prize, shall publish his essay in book form, and that he shall deposit one copy of the work in the Samuel D. Gross Library of the Philadelphia Academy of Surgery, and that on the title page, it shall be stated that to the essay was awarded the Samuel D. Gross Prize of the Philadelphia Academy of Surgery. The essays, which must be written by a single author in the English language, should be sent to the "Trustees of the Samuel D. Gross Prize of the Philadelphia Academy of Surgery, care of the College of Physicians, 219 South Thirteenth St., Philadelphia," on or before January 1, 1905. Each essay must be distinguished by a motto, and accompanied by a sealed envelope bearing the same motto, and containing the name and address of the writer. No envelope will be opened except that which accompanies the successful essay. The committee will return the unsuccessful essays if reclaimed by their respective writers, or their agents, within one year. The committee reserves the right to make no award if the essays submitted are not considered worthy of the prize. John B. Roberts, M.D., William L. Rodman, M.D., William J. Taylor, M.D., *Trustees.*

CHICAGO.

Repeal of Act Compelling Record of Births and Deaths.—Speaker Miller has introduced in the legislature at Springfield a bill to repeal the law passed two years ago, "requiring reports of births and deaths, and the recording of the same, the regulation of interments, or other disposal of dead bodies." Three other bills of the same character have been presented, but this emanating from the Speaker of the House, carries additional weight. Speaker Miller says he does not think the passage of the repeal bill will affect the health relations of Chicago or other cities in the State. All he desires to do is to free the residents of rural communities from what they consider an obnoxious law. State Board of Health officials say that every physician in the State will oppose the repeal of the present law. The law can be amended to cover the objections pointed out by the people in Southern Illinois, and a bill to that effect is now on second reading in the Senate. This bill simply provides that more officers can issue burial permits, and will remove the hardships alleged to be imposed by the present law.

Consent of the Patient for Operation.—Consent of the patient, or of some person authorized to speak for him, or her, as the case may be, must be obtained by a surgeon before he performs an operation, according to a recent decision handed down by Judge Murray F. Tuley. Without express consent, the judge finds a violation or trespass on the body of the individual is committed by the surgeon in his use of the knife and ground is thereby established for a damage suit. The case involved in the finding was a suit brought by Mrs. P. J. Davis against Dr. Edwin H. Pratt. It is said that in 1898, Dr. Pratt performed the operation of hysterectomy on Mrs. Davis. Mrs. Davis, it was alleged, was at that time unsound mentally, and has since been adjudged insane. Damages of $3,000 were awarded. Among other things, Judge Tuley in summing up, stated "that the preponderance of the evidence is that the doctor did not have the consent of the plaintiff or of her husband to perform this operation. The doctor's evidence impresses the court with the feeling that a surgical operation of the character that was performed on the plaintiff was, to him, at least, a trifling matter, and that he believed he had the right, if he thought the patient would be benefited by such an operation, to use his own judgment and act upon it without much regard as to what the patient or her friends might desire. The fact that neither the sister nor the husband was present when this operation was performed is a strong circumstance tending to show that the doctor acted without the consent of the husband. One or the other would naturally have been present at the hospital at such a time. It is not claimed that the doctor performed the operation in an unskilful manner. No malpractice is charged. The absence of malice does not excuse an unauthorized trespass on the body of the plaintiff."

Birth-rate of Chicago.—The Health Department, in its weekly *Bulletin,* states, among other things, that whatever may be the facts as to a decreasing birth-rate elsewhere, as exploited by Presidents Roosevelt and Elliott, and by others, there is no immediate cause for concern over the birth-rate of Chicago. In 1890 there were 135,541 children so enrolled, of which number 20,175 were under seven years of age. Those under seven formed 1.83 per cent. of the total population (1,099,850) of the city in that year. In 1900 the total enrollment was 225,861, of which number 48,817 were under seven, a proportion of 2.87 per cent. of the total population—1,698,575—in 1900. These two sets of figures show an increase of 57.3 per cent. of children under seven in proportion to total population, and of 141.9 per cent. in the actual number of children under seven during the ten years. The increase in the total population at all ages was 52 per cent. between 1890 and 1900, while the increase in the under seven year population was 57.3 per cent., or 5.3 per cent. in excess of the increase of the total population at all ages. This excess is obviously due to the births during the period. Of much more importance are the figures which show that, while the newly born are increasing in numbers year by year, they have a vastly better chance of living now than they had a dozen years ago.

Influenza.—This disease continues to spread and oculists report its manifestations in severe and painful inflammation of the eyes. Dr. Wynekoop, of the City Laboratory, first identified the influenza germ, about four years ago, as the cause of the malady known to the laity as "pink eye." Once recognized, it is easily and promptly cut short by appropriate antiseptic treatment. As it is highly contagious, medical attention should be secured as soon as possible.

Children's Hospital Society.—At a recent meeting of this Society the objects of the organization were explained by Drs. Billings, Abt, Henrotin, Engelmann and Christopher. Dr. Fernand Henrotin was appointed Chairman of the Advisory Committee, and Dr. Isaac A. Abt, Chairman of the Medical and Visiting Committee. Instead of building a separate hospital it was decided to create an endowment fund to enlarge and improve the hospital facilities already existing for the care of sick children and to coordinate the various philanthropic interests involved.

CANADA.

Annual Meeting Montreal General Hospital.—At the annual meeting of the corporation of the Montreal General Hospital, held last week, it was stated that not less than 2,878 indoor patients were treated in that institution during 1902, while in the outdoor departments the consultations numbered 31,993. Dr. F. G. Finley, the secretary, read the financial report which showed that receipts had totalled $87,439, and the expenditure $99,967, an excess of expenditure over receipts of $12,528. The endowment fund has grown in the year from $37,500 to $43,500. Fifty-five more patients were treated in the wards than in 1901. Of the total number treated in the wards, 166 were in the hospital at the beginning of the year, 2,894 were admitted during the twelve months, and 184 remained in the hospital on Dec. 31, 1902. There were discharged from the hospital 2,652, and there died in the hospital 226. Of the latter 88 died within three days of their admission. The mortality was 7.5 per cent., or 4.8, if the 88 were omitted. The average cost of patients per day was $1.49. Dr. F. G. Finley was reelected secretary.

Hospitals for Contagious Diseases in Montreal.—A deputation from the Royal Victoria, the General and Notre Dame Hospitals, Montreal, met in the Mayor's chambers, City Hall, last week, to consider the recent proposition of the City Council with regard to Notre Dame and one of the English hospitals taking care of the cases of infectious diseases arising in the city among the French and English sections of the population respectively. The authorities of the General and the Royal Victoria hospitals submitted the proposition that these two hospitals should erect conjointly a hospital to be known as the Alexandra hospital, which might be either erected within or without the city limits as was best deemed proper. As far as the English hospital was concerned its promoters stated that there would be no distinction of creed or class in the patients admitted. This was considered satisfactory; and another meeting will be held shortly when Notre Dame will come forward with its scheme.

The Western University at London, Ont., wants a Hygienic Institute.—A deputation from London, Ont., headed by Drs. Robert Ferguson and H. A. McCallum, recently waited on the Ontario Government seeking for the establishment of an Institute of Hygiene in connection with the Western University in that city. The object of the university is to have the government build and maintain an Institute of Hygiene, equipped with laboratories for the purpose of providing scientific facilities for the prevention and treatment of infectious and epidemic diseases. Their application was refused on the grounds that it would involve obligations which required time for investigation and consideration. It is the intention of the petitioners to prefer the application at a future date, as they claim the government should do something for Western Ontario, after the handsome manner in which it has assisted the Medical Department of Toronto University, and Queen's University in the eastern section of the province by the establishment of the School of Mines at Kingston.

McGill Graduates in British Columbia.—The annual meeting of the British Columbia Society of McGill graduates took place at Vancouver on Saturday, Feb. 14, a large portion of the entire membership of 100 being present. Dr. D. H. Harrison, Vancouver, the oldest graduate present (1864), was elected President and in expressing his acknowledgments said he felt as much pride in his Alma Mater as did the youngest graduate present. Dr. McGregor, Vancouver, the secretary and founder of the Society, was reelected Secretary; while Dr. Tunstall of Vancouver was elected treasurer, and Dr. G. H. Manchester, New Westminster, one of the vice-presidents. It is proposed to continue to offer the annual prize of $50, and an additional second prize of $25 for the first and second best matriculant each year from British Columbia.

Personal.—Dr. Goldwin Howland, a graduate of Toronto University, has just been successful in receiving the degree of M.R.C.P., in London, England. There are said to be only six other Canadians holding this degree. Dr. Howland is at present resident physician of the National Hospital for the treatment of nervous diseases, and clinical assistant at the Hospital for Sick Children, Great Ormonde street, London. He will return to Toronto shortly to commence practice.

Obituary.—By the death on Feb. 16, of Surgeon Lieut.-Col. Caird Ryerson Maclean, Meaford, Ont., loses one of its prominent citizens. The late Dr. Maclean, who was in his sixty-sixth year, was graduated from Queen's University, Kingston, Ont., in 1859, having the previous year been graduated from the University of New York. At the outbreak of the American Civil War he joined the Union Army as surgeon, and at the close thereof, returned to Meaford, where he continued in practice up to a year ago, when he was stricken with apoplexy, from which he at that time recovered. A second attack supervened a few months ago, which finally culminated in his death. One son, Dr. J. Douglas Maclean, Sault Ste. Marie, Ont., survives him.

GENERAL.

Third International Congress of Insurance Companies' Physicians.—This Congress will meet in Paris, for the discussion of scientific questions connected with life insurance the third week in May, 1903.

Medical Students in Germany.—For the first time in many years, official reports show a falling off in the number of medical students registered in the German universities.

The Stethoscope.—This is the title of a new English journal to be devoted entirely to the study of the diagnosis and treatment of pulmonary tuberculosis. Dr. J. Robertson Wallace is to be its editor.

Woman's Medical College of Baltimore.—The twenty-first anniversary of the Woman's Medical College was celebrated Saturday evening at the institution. The feature of the celebration was a paper on "The Study of Medicine," by Dr. Henry M. Hurd, of the Johns Hopkins Hospital. In the course of his paper Dr. Hurd commended the work of the college. Rev. Edward Huber, pastor of St. Matthew's German Lutheran Church, offered prayer, and remarks were made by Dr. Richard H. Thomas, dean of the faculty.

State Care of Insane in Maryland.—The seventeenth annual report of the Maryland State Lunacy Commission, which has just been issued, deals in an interesting manner with the problem of State care of the insane and discusses the progress and the lack of progress made in Maryland. "The insane in Maryland," the report states, "are cared for in four different classes of institutions—State and city hospitals, county asylums, county almshouses and private and corporate institutions. It is a matter of congratulation that in very few of the county almshouses are to be found cases of acute insanity or cases requiring hospital care. At the same time it must be said that the accommodations for the chronic cases are in many instances wholly inadequate. This is especially true as regards the negro insane. It is almost as illogical to send a case of acute insanity to a county hospital as it would be to send there an acute medical or surgical case. There can be no doubt of the fact that when the people of this State become fully alive to the great needs of the insane better conditions will prevail. This much may be said: The insane in Maryland are cared for as well as the facilities afforded permit. Spring Grove and Springfield Hospitals are models of their kind, the former adapted to the care of the more acute cases, the latter for chronic cases. It is to be regretted that Bayview, the city asylum, is not dispensed with. It is manifestly improper to attempt to care for the city paupers and the city insane under the same management. Either the city should maintain a separate asylum for its insane, apart from the almshouse, or, what would be far better, acquiesce in the plan of State care. If the two State hospitals—Spring Grove and Springfield—were enlarged, the insane of the State could be cared for in a far better manner and really at lower cost than under the present system." After discussing at some length the question of county care the report states: "Without intending to make this criticism harsh, it must be said with all deference, that the worst feature in the care of the insane in our State is the county asylum. In the almshouses there are now very few cases that require hospital care. The majority of the insane in the almshouses are idiots and dements. In the county asylums, on the other hand, are many cases of acute and subacute insanity that demand careful treatment. It is simply impossible for any county to properly equip and conduct a hospital for the insane. There can be no doubt of the fact that there is a growing sentiment in this State for State care of the insane. Five or six counties send all their insane to the State institutions, and many other counties care for only a few demented cases. The time is ripe for the radical change from county to State care. At a recent meeting of the Medical and Chirurgical Faculty of Maryland the plan of State care was most heartily indorsed, and a committee was appointed to draft a suitable bill to be presented to the next legislature."

CORRESPONDENCE.

NERVOUS DISEASE HOSPITAL.

New York, Feb. 17, 1903.

Honorable Homer Folks, Commissioner of Charities,
Foot of East Twenty-sixth Street, City.

Dear Sir: In reference to the proposed hospital for nervous diseases, the establishment of which I discussed with you the other day, I would submit for your consideration the following facts:

Some ten years ago, when I was acting as an attending neurologist at the City Hospital and consulting neurologist to the Randall's Island institutions, and at the same time familiar with the material at the Almshouse through Drs. Fisher and Bailey whose cases I often saw, it became evident to me that it would be a great advantage to have all classes of nervous diseases congregated together in one building, with a superintendent who understood neurology at the head and young men interested in neurology as internes and the best neurologists of the city as attending physicians. There is no doubt in my mind that the patients would be better off, because their maladies would be more carefully studied and treated than is possible under present conditions when they are scattered about in every ward of Bellevue and of the City Hospital, in the Almshouse Hospital, and at Randall's Island. This enormous material would be of inestimable value for teaching purposes for students in all our colleges if it could be collected together. At that time I estimated that there were some eight hundred cases of nervous diseases in these various departments. Probably this is a minimum figure.

If some building on Blackwell's Island could be set aside for this purpose, some renovations and additions could be made which would render it suitable for this category of cases. The new hospital would need an operating-room, hydrotherapeutic apparatus, an electrical room, photographic room, ophthalmoscopic room, mortuary and laboratories.

The following kinds of nervous disease would be proper for admission to the proposed hospital:

Locomotor ataxia, ataxic paraplegia, spastic paraplegia, tumors of the spinal cord, spinal cord injuries, multiple sclerosis, syphilis of the brain and spinal cord, meningitis, cranial nerve paralysis, injuries to the brain, abscess of the brain, tumor of the brain, hemiplegia, cerebral paralysis of children, poliomyelitis, progressive muscular atrophies, neuritis, alcoholic multiple neuritis, epilepsy, hydrocephalus, myxedema, acromegaly, exophthalmic goiter, scleroderma, chorea, paralysis agitans, hysteria, neuralgia.

In addition to this large separate hospital, which I think might be named "The New York City Hospital for Nervous Diseases," there should be set aside at Bellevue Hospital one ward for each sex, to serve as a reception ward for nervous cases. From these wards the patients could be transferred to the "Hospital for Nervous Diseases," as required.

Very truly yours,
Frederick Peterson.

OUR PARIS LETTER.

(From Our Special Correspondent.)

Paris, France, February 4, 1903.

ROTHSCHILD POLYCLINIC—BARLOW'S DISEASE IN FRANCE—ROBIN CRITICIZES BOUCHARD'S COMMUNICATION TO THE CAIRO CONGRESS—DEATH OF PANAS AND VARNIER—LETULLE ON THE "ANATOMY OF THE PARIS HOSPITALS"—HONORS FOR PROFESSOR BROUARDEL—TERRIER'S STATISTICS IN THE TREATMENT OF APPENDICITIS.

A new polyclinic for the treatment of children's diseases has been opened recently in one of the populous quarters of Paris. The funds for its construction were furnished by Dr. H. de Rothschild, a member of the wealthy family of that name. There are special sections for ophthalmology, laryngology, radiology, and also two or three small wards containing a few beds. A library containing 10,000 volumes, chiefly on pediatrics is attached to the establishment. The Minister of the Interior, Mr. Chaumié, was present at the inaugural ceremony.

Dr. H. de Rothschild furnished a report on Barlow's disease at a recent meeting of the Society of Obstetrics. This disease is very rare in France, or, at least, rarely recognized, as only 23 cases have so far been described. It is frequent in Germany, as many as eight or ten cases being seen yearly by Baginsky. According to the author's statements 400 cases have been reported in America. Baginsky has sometimes seen it even when the child is fed at the breast. Dr. Tissier remarked that the disease was of alimentary origin, and was to be seen chiefly when sterilized milk was used or else proprietary foods. As raw milk causes death by diarrhea, it is impossible to begin using it again. Heating the milk several times or overheating is certainly a cause of change in milk. Professor Buclin, who has been the ardent advocate of sterilized milk, said he had never seen a case of Barlow's disease, and that he felt that other causes besides the sterilization of milk were to be incriminated. Overfeeding might be a disturbing factor in some cases.

Professor Bouchard's communication to the Cairo Medical Congress has given rise to a claim from Dr. Robin in regard to the new methods used in therapeutics. Dr. Bouchard described his method of using small doses locally in rheumatic fever, for instance, by hypodermic injections, though it must be noted that he did not say he was the first to use this technic. Dr. Robin wrote a letter to the *Presse Médicale,* in which he declares that for the last seven years he has been following out this method, and had described it in his treatise on Diseases of the Stomach.

The Faculty of Medicine of Paris has lost two important men during the last month, Panas and Varnier. Panas was a Greek, born in Cephalonia in 1831, but he was brought to Paris when he was still a child, and when he began to study medicine he had himself naturalized. He obtained the position of house surgeon when he was 23, with such men as Peter, Luton, Lecorché, Fournier, Marcy. Ten years later he became professor agrégé, and surgeon of the hospitals. After the Franco-German war, specialties were looked upon with more favor in France, and Panas taught ophthalmology at the Faculty. His lessons on strabismus were published in 1873, on keratitis in 1876, on the lacrymal apparatus in 1877, and in 1878 on retinitis. In 1878 the chair of clinical ophthalmology was established at the Hotel Dieu, Panas being its first occupant. Varnier died when he was still relatively young, as the result of an attack of influenza, which he suffered from a year ago. He was house surgeon when 23 years old, and obstetrician of the hospitals when he was 35 years old. As the pupil of Pinard, he was able to do excellent work and his principal work, "Introduction to the Clinical Study and the Practice of Midwifery," was published with Farabeuf. Another work, "Everyday Obstetrics," published recently, is up-to-date and profusely illustrated.

Dr. Letulle, the chief physician of the Boucicault Hospital, has recently published an article on the "Autonomy of Paris Hospitals," in the *Presse Médicale.* Until now the hospitals have been placed under a central management, and they have been obliged to submit to the same rules. All financial affairs were controlled by the director of the Assistance Publique, and the director of the hospital is purely an employe. Dr. Letulle would prefer the English system, where there is a board of trustees, and where the physicians of the hospitals may have something to say as to the management of the institution.

Professor Brouardel, former dean of the Faculty of Medicine, has recently been named grand officer of the order of the Legion of Honor, and the ceremony followed out in such cases was chosen as a means of testifying publicly to Dr. Brouardel the esteem which his works have brought him. The ceremony took place in the amphitheater of the Faculty of Medicine, and the Minister of Public Instruction, Chaumié, was present as well as other functionaries, such as the vice-rector of the Academy, Liard, the present dean, Debove, and many others. The first speech was by a pupil of Brouardel, Professor Gilbert, who showed how his master had successively sacrificed the laboratory, his patients and his rest, so as to fulfil the duties demanded by the State as hygienist and doctor of legal medicine. Since he has ceased to be dean, Dr. Brouardel has occupied himself more especially with the means which are being employed to suppress consumption, and Chaumié spoke most feelingly of this at the close of his discourse.

At a recent meeting of the Society of Surgery Dr. Terrier, the celebrated French surgeon, furnished his hospital statistics in the treatment of appendicitis during the period of 1900 to 1903. Thirty-nine urgency operations were performed with four deaths, or 10.25 per cent.; 17 operations were done à chaud with one death, or 5.88 per cent.; 61 were done à froid, with only one death, or 1.80 per cent. This makes 117 operations for appendicitis with only six deaths, or 5.12 per cent.

TRANSACTIONS OF FOREIGN SOCIETIES.

French.

ASSOCIATED NEOPLASMS—OBLITERATION OF THE URETHRA—LIPOMA OF THE SIGMOID COLON—UREMIC ULCEROUS DUODENITIS—CIRRHOSIS TERMINATED BY CURE, WITH A HISTOLOGICAL EXAMINATION OF THE LIVER—PATHOGENESIS OF TABES—TWO CASES OF FATAL POISONING WITH CARBON DIOXIDE WITH ANALYSIS OF THE BLOOD FOR THE GAS.

M. Monod, at the Society of Surgery, Jan. 24, 1903, stated that he recently observed two cases of associated various forms of neoplasm. The first patient was a thirty-seven-year-old woman upon whom he had operated for a cyst of the ovary. During this interference, he noticed the presence of concomitant uterine fibroma. In addition, therefore, to an ovarectomy, he performed a hysterectomy of the supravaginal abdominal tube. The outcome of these procedures was perfect. His second patient was also a woman fifty-two years old in whom a diagnosis of fibroma of the uterus had been made. Upon opening the abdomen he found that there existed in reality a tumor of the left adnexum. The liberation of this growth was very difficult, and necessitated the resection of the sigmoid colon for a length of 15 cm. From this woman, as from the last, he removed the uterus, and in the same manner. Histological examination demonstrated the fact that the cavity of the uterus had been invaded by an epithelioma, and that the extra-uterine mass was a sarcoma. These two facts prove what he has previously claimed, that the removal of the uterus augments only to a small degree the gravity of an intervention whose principal purpose is the extirpation of a tumor in the adnexum. He therefore utters the dictum that it is wise to perform a hysterectomy whenever this operation will have an advantage for the patient.

M. Pazy, at the same session of the Surgical Society, presented a communication on behalf of M. Bonnet, a military surgeon, upon a subject of considerable importance, about which the society had asked for a detailed report. It consisted of an example of obliteration of the urethra by a congenital valvule, which was successfully treated by external urethrotomy. This valvule was situated in the region of the bulbus urethræ, not far from the membranous portion. It was resected and the canal sutured with catgut. Union of parts was without incident. Very soon micturition was performed in a perfectly normal manner. The functional result has remained excellent up to the present time, although it is several months since the time of the intervention.

M. Malapert, of Poitiers, presented to this Society, at the same meeting, the history of a case of lipoma of the sigmoid colon which had developed in one of the appendices epiploicæ, and was removed successfully from a thirty-eight-year-old woman. The mass weighed more than six kilograms. There seems to be no other record in medical literature of a lipoma of such proportions in this situation in the body.

Barrit, at the Medical Society of the Hospitals, Jan. 16, 1903, presented a contribution concerning a man, fifty-four years old, an alcoholic and syphilitic, presenting all the signs of a chronic nephritis, who was seized, during the course of a uremic crisis of a dyspneic form, with diarrhea, copious hemorrhage from the intestines, and finally convulsions, followed by coma and death. M. Delannay was the collaborator of M. Barrit. The autopsy showed granular kidneys, enlarged kidneys and hypertrophied heart, with traces of an uremic pericarditis, which had been suspected during life, and finally, widespread thickening of the arachnoid membrane, which was not localized in any special part of the brain. The stomach was sound, but, on the contrary, the intestine was filled with dark-colored blood, and the duodenum was the seat of four small oval ulcers, its sharp edge surrounded by a hemorrhagic zone. The ulcerous duodenitis of hemorrhagic origin is a rare affection; only twenty cases appear to have been published up to the present time. These ulcers may destroy the mucous membrane in all its layers, invade the muscular tunic, and finally the serous layer of the duodenum, after which they give rise to peritonitis by perforation. They may also invade the pancreas, the biliary bladder or gall-bladder and common bile duct, and likewise the cystic and hepatic ducts, the gastro, the pancreatic and duodenal arteries. They thus determine ovarian hemorrhage. Clinically, ulcerating duodenitis sometimes shows itself by signs of acute peritonitis with perforation, sometimes by epigastric pains with radiation into the lymphatic region, with vomiting and with diarrhea, and with other intestinal symptoms. Its most common sign, however, is tarry stools. The pathogenesis of duodenal ulceration of uremic origin is still very little elucidated. The one point that appears to be well established is that during the course of a renal insufficiency, there are created supplementary avenues of elimination of the urinary poisons. One might therefore admit that the intestine and perhaps the duodenum constitutes one of these avenues of elimination, and one might infer that the ulceration process in this latter organ is the direct result of these poisons acting on its walls.

M. Apert communicated an observation of a forty-four-year-old man addicted to the daily use of alcohol for many years to the limit of four quarts of wine a day. Entered the hospital with all signs of cirrhosis of the liver, including a considerable ascites, collateral circulation, mild degree of jaundice, etc. Under the influence of an absolute milk diet, the condition of this patient was not improved. The cure appeared to be complete after two punctures, because the ascites did not return. Six months later the patient died of erysipelas. An examination of the liver was made, and showed considerable thickening of Glisson's capsule and a cirrhosis which did not differ, to the naked eye, from the fatal forms of the disease. With the microscope were noted, in addition to the points of degeneration described by Kahn, a considerable vascularization in the points of sclerosis around the nodules, and a dilatation almost angiomatous in type, of the capillaries in certain nodules. This arrangement of the tissue appears to explain why the portal circulation was successfully reestablished, although the sclerosis persisted.

M. Guillian exhibited, in the name of M. Marie and himself a number of drawings and preparations of the spinal cord, which proved that in tabes dorsalis, if the lesion especially affect the posterior columns and the posterior routes, they are divided, and do not show a radicular type. These lesions of posterior columns, moreover, are superimposed upon alterations which are exclusively localized in the pia mater posterior. Comparing these anatomopathological facts with the invasion of the lymphatic system and the anterior columns on the one side and the posterior columns on the other side, these authorities draw the conclusion that tabes dorsalis is a syphilitic infection of the lymphatic system of the posterior column of the cord.

M. La Cassagme, Martin and Licoux, at the Society of Biology, Jan. 17, 1903, read the history of a case of fatal coal-gas poisoning, with analysis of the blood. A woman, sixty-three years old, was found dead at the foot of her bed Nov. 27. A Sister of Charity, aged forty-five years, went to watch over the body on Nov. 29, between 10 and 11 o'clock in the morning, and was found dead that afternoon about 3 o'clock. An autopsy was held on both these cadavers the following day. It was noticed that the body of the Sister of Charity showed all the symptoms of poisoning by carbon monoxide, namely, rose-colored blotches scattered over the body, a red decubitus, red blotches in all the mucous membranes, blood dark, and rose-hued injection and staining of the intestines and relaxation of the sphincter. Her heart was not filled with blood-clots. In the cadaver of the older woman the mucous membranes were pale and did not present blotches, and the skin was not the seat of any eruption.

The decubitus was violaceous, and the blood was dark-colored. The heart contained two large clots. There was, however, a very marked atheroma of the arteries of the sigmoid valves, of the columnar arteries, and of the sclerosis of the kidneys. Analysis of the blood for gas showed that the blood of the first cadaver contained 13.8 per cent. carbon monoxide, and that of the second cadaver contained 17.7 per cent. The respiratory capacity, namely, the volume of oxygen which 100 c.c. of blood were able to absorb was 8.8 per cent. The first conclusions drawn from these findings is that the blood may be oxycarbonated without there appearing in the cadaver characteristic signs of poisoning by carbon monoxide. The second conclusion is that a person in perfect health may succumb to carbon monoxide. Blood which contained 17.7 per cent. of the gas was still able to absorb 8.8 per cent of oxygen. In other words, a preparation of the hemoglobin, 8.8 in 26 was still able to absorb oxygen. This is a fact of great importance, because in this degree of intoxication neither the rabbit nor the dog will die.

SOCIETY PROCEEDINGS.

THE NEW YORK ACADEMY OF MEDICINE.

Section on Genito-Urinary Surgery.

Stated Meeting, held January 21, 1903.

John Van der Poel, M.D., Chairman.

Nephrectomy for Tuberculosis; Two Cases.—Dr. F. Tilden Brown said that in the printed reports of the transactions of the last meeting of this section, his criticism of the method employed by a former speaker for ascertaining the condition of a presumably healthy kidney before operating on the one diseased was made to read "differentiation of the kidneys," while what he said was differentiation of the urines by ureter catheterization. In showing the present cases of renal tuberculosis attention was called to what was exceptional in his experience, namely: that despite many careful examinations tubercle bacilli were not found in the urine. And this positive confirmation of the presumed diagnosis was only gained upon examination of the removed kidney in one case and in the other upon examination of the curettings secured at the time of the nephrotomy, although both the clinical manifestations, together with the results of ureter catheterization, made the diagnosis strongly presumptive. In one case the rapid transformation from a state of prolonged invalidism and emaciation to that of robust active individuality must seemingly be ascribed to the nephrectomy, while in the other was noted the comparative anomaly of a person very ill before and barely surviving a hasty nephrotomy now presenting in what she claimed to be a satisfactory state of health despite the presence of two enlarged and presumably tuberculous kidneys, and in whose urine tubercle bacilli can readily be found at any examination. It was difficult to see here how the very marked improvement under the circumstances could be ascribed to an operation which at the time could not but be considered as wholly inadequate. When this patient begins to fail again it will not be easy to decide what sort, if any, aid can be offered by surgery. Both cases illustrated well the progress in chronic renal tuberculosis, which was generally not a steady advancement, but a succession of exacerbations and periods of latency. It was not to be overlooked that the individual exacerbations may be so slight that the disease was not even suspected until the advanced stages were reached, and even then the bladder symptoms were so much more in evidence that the kidney was overlooked. Even in the latent periods some sudden tuberculous crisis may involve other regions by blood dissemination and cause death.

Case I.—Married woman, twenty-six years old, American. He had sent to Presbyterian Hospital July 12, 1902. Discharged improved Sept. 20, 1902. This patient had a tumor in the right umbilico-lumbar region, which was thought to be a kidney. She was at this time so weak that her ability to come to his office caused surprise. Family history was negative. Personal history: Had always been healthy as a child, and when married, four years ago, weighed 160 pounds and had red cheeks. Considered herself well up to one year ago, when she began to have attacks of sharp pains in the right side. These were thought to be caused by pleurisy, as there was a slight cough without expectoration. There was also undue frequency of urination, but no attention was paid to it, as a habit of this sort had existed for some years. Now she began to lose flesh and strength and was sent to the country, but did not improve. Three months ago the frequency with which she had to urinate, both night and day, became quite noticeable. The right side pains were more severe and a fulness was noticed in the right side of abdomen. She felt feverish in the afternoon, perspired freely at night and has grown very weak. Tuberculosis of the right kidney was suspected and she was sent to his service in the Presbyterian Hospital for further examination. Heart action irregular; pulse of poor force and quality; abdomen rather prominent, muscles rigid, especially in right hypochondrium, where by bimanual palpation a considerable mass could be indistinctly felt. Left kidney cannot be definitely made out. Cystoscopy showed the bladder walls coated with muco pus, especially at bases and about right ureter mouth, parts of which could be seen to be swollen and almost ulcerous. Synchronous catheterization of the ureters resulted in no flow from the right side. On withdrawal, the catheter was found blocked with mucopus, microscopic smears prepared from which showed many pus cells, no tubercle bacilli and a fair number of cocci. The urine from left side looked fairly well to gross inspection, but report showed it to be acid. Sp. gr., 1.020; albumin, heavy trace; urea, two per cent.; indican, considerable; good many pus cells and quite numerous hyaline granular and epithelial casts. Blood examination: Leucocytes, 17,800; red blood cells, 3,550,000; temperature ranged between 100° F. to 103° F.; pulse, 105 to 120. Operation, August 22. Gas and Ether. Transverse incision below twelfth rib. Kidney found much enlarged, the adipose capsule converted into a fibrous one of such dense consistency and so intimately adherent to peritoneum and other surroundings that eneucleation for nephrectomy was deemed too hazardous for the patient's lowered vitality to endure; nephrotomy substituted. Three separate pockets were opened containing several ounces each of a thick, yellow, odorless pus. A curette was used to secure some of the renal tissue which gave positive evidence of tuberculosis, while cultures from the pus afforded diplococci answering to *Diplococcus lanceolatus.* Drainage was provided for and the patient put to bed in a very weak state. For a week it was doubtful whether she would live. The discharge from the kidney was copious, all preexisting pain was relieved. Gradually the patient began to gain strength. The abdomen was now less tense and it was easy to palpate, an enlarged and somewhat prolapsed left kidney, somewhat tender. One month after operation patient had improved enough to sit up, and at the end of another month she was able to be moved to the country. At this time she was voiding twenty-four ounces of urine, in the sediment of which tubercle bacilli were never found. Sp. gr. 1.010-1.020, reaction acid, three per cent. pus; albumin, a moderate trace at time of discharge and no casts. Kidney sinus still discharging. In Sullivan County, N. Y., she gained gradually in strength and weight and returned to New York after two months, claiming that she felt well and strong. She gained nearly thirty pounds. Despite her protestations of health, and the fact that urine is not voided oftener than every three hours, every specimen affords easy opportunities to discover tubercle bacilli.

Case II.—Woman, forty-three years old, widow, twice married. Admitted to Presbyterian Hospital July 26, 1902. On admission she was emaciated and anemic; weight, 83 pounds. Discharged cured Sept. 16. Complained of vesical discomfort, frequent urination and pain in the left umbilical and lumbar regions, especially when in erect posture, sharply radiating to the left groin and thigh. Family history negative, except for rheumatism, and father died of some renal trouble. Personal history: Good health as child, menstruated at fifteen, married at 17. Two children born, both died of lung trouble after a few months. Husband died of consumption after four years. Two years later patient had a left pneumonia; good recovery. When thirty-two years old, married a second time; one year later had miscarriage; a severe pelvic peritonitis and cystitis followed; a year later another miscarriage, and shortly after her husband died of complicated diseases, but alcoholism principally. Patient had never suspected that husband was a syphilitic, but facts now elicited strongly suggest that he was. At this time, 1891, patient was in poor general health; but she gradually picked up and seemed well until three years ago, when bladder irritability and frequency of urination gave trouble; about the same time a bad cough appeared, the latter was cured with cod-liver oil. Six months later, during the autumn,the bladder was bad enough to require irrigations. Now, a severe attack of anorexia and vomiting lasting five weeks came on, and she was reduced to 74 pounds, during this period the vesical irritability was in abeyance, vomiting ceased for two weeks, then recurred, and this time associated with diarrhea. Now patient entered one of the city hospitals, from which the following abbreviated report was obtained: "Vomiting usually occurs soon after eating. There is a tendency to numbness in feet and legs, some difficulty in walking, due to weakness. Since admission a rash noted on arms and hands, some itching. Vision good. No girdle sensation, no anesthesia; slight incoordination of arms. Knee-jerks absent. Some abdominal tenderness; right kidney palpable. Afternoon temperature 100° or 101° F. Five examinations of blood: Leucocytosis varied from 13,500 to 19,000. Urine examination: Sp. gr., 1.012; acid, trace of albumin; no tubercle bacilli found. Diagnosis: Locomotor ataxia. Complications: Acute gastritis, cystitis." After four weeks' treatment, much improved, and went home. One month later bladder trouble returned, when she was referred to Dr. Brown's service in Presbyterian Hospital, when physical examinations showed a slight cystolic murmur. Normal lungs. Moderate ptosis of liver and right kidney. In the left side there was a mass filling the iliocostal space. Just to left of median line and from tip of ninth rib to one inch above umbilical level. The mass was nodular, and very hard, and was tender. Percussion note flat, beyond the nodular portion the mass was smooth, elastic and extended two inches below level of umbilicus. Seemed to descend slightly with deep inspiration. Vaginal examination negative.

Urinary analysis corresponded closely with that already quoted from report of her previous hospital; no tubercle bacilli were found. Leucocytosis was also about the same, 14,000, and the varieties of different blood cells were present in normal percentages. Cystoscopic examination showed edema and congestion of the bladder base. The normal position for left ureter opening was so covered with adherent muco-pus as to prevent catheterization. The urine from the right ureter was clear and to macroscopic appearances normal. Microscopically it showed a few hyaline casts. No leucocytes. Chemically a slight trace of albumin. Culture of this urine gave no growth. Culture of the bladder urine gave a large coccus, probably *Micrococcus ureæ*. A radiograph showed no shadow in left lumbar region.

Diagnosis: Tumor implicating the left kidney, probably tuberculous. On August 2, under gas and ether anesthesia, left nephrectomy was performed. A vertical incision along outer border of left rectus was first made to permit of digital exploration, but without opening the peritoneum, as was anticipated; the tumor was found to be retroperitoneal. A right-angled incision was then extended along costal margin to erector spinæ muscle. The kidney was firmly adherent about its upper pole. A cavity was here broken into containing several ounces of thick, odorless pus. The tissues making up the pedicle were so thickened and indurated that the heavy catgut ligature was supplemented by a clamp left on for 36 hours. The cavity was washed with salt solution, and lightly gauze-packed. Most of wound closed in layers. Patient was in good condition throughout operation. No growth obtained from culture of pus in kidney.

Pathologist's reports of kidney: Pelvis and calices much dilated. Lining of cavities rough and pink with numerous yellow specks. Renal tissue thinned to ⅛ to ¼ inch thick. Small cheesy purulent foci present. Outer surface fairly smooth, pale with petechial specks. Microscopical Examination: Tuberculous inflammation; giant cells abundant; some tubercle tissue; some small irregular necrotic areas surrounded by radial nuclei; much small-celled infiltration.

For two days after operation, nausea and vomiting were constant, but pulse excellent. Temperature, 99° F. to 102° F. On sixth day temperature fell to normal; pulse, 74 to 80. No pus in wound dressings, only a serosanguineous moisture. Patient improved rapidly. Tenth day small remaining wound, closed by secondary suture, healing primarily. Patient up on nineteenth day and discharged on thirtieth. Very rapid gain in strength and weight. She now weighs 40 pounds more than at time of operation. The urine is now normal, and passed at normal intervals.

Renal Calculus with Radiograph.—Dr. F. Tilden Brown presented an excellent skiagraph showing a small renal stone, consisting of oxalate of lime, weighing a scant ten grains. The picture was taken by Mr. Caldwell, of the University and Bellevue Hospital Medical school. The stone was removed a week ago, and the speaker would defer remarks until showing the patient at a later meeting.

Dr. Alexander B. Johnson spoke of the detection of renal calculi by means of the X-ray. He had interested himself in this matter to a considerable extent, and said that he was always glad to know that a successful diagnosis had been made by this means. Except in extremely rare cases, when the stone can actually be palpated through the abdominal wall or where two or more stones in the kidney can be felt to grate upon one another, there is no absolutely positive means of detecting the presence of a renal calculus other than by the use of the X-rays. There was a very general impression prevailing that a very large proportion of primary kidney stones, *i.e.*, stones occurring in kidneys previously healthy were composed of uric acid or of uric acid salts. As a matter of fact he believed that this impression was not entirely correct. It was quite true that uric acid and uric acid salts were common ingredients of kidney stones, and often formed the largest proportion of the material of which kidney stones were composed, but usually other ingredients existed in these stones, viz., oxalate of lime and phosphates of the alkaline earths. Last year he had had more than 25 stones, most of them kidney stones, subjected to chemical analysis. He had collected these stones from various sources, and had selected for the most part those supposed to consist of uric acid and urates. He was surprised to find that with one exception these stones, although containing a large proportion of uric acid and its salts, contained also oxalate of lime or phosphates to the extent of 10 per cent. or more. The solitary stone which consisted of uric acid only was a very large vesical calculus, obtained from one of the hospital museums. The practical bearing of these facts upon the diagnosis of kidney stones by means of the X-rays he considered important. As was well known, stones consisting of oxalate of lime or phosphates are penetrated with difficulty by the X-rays, and therefore cast strong shadows upon a photographic plate, whereas uric acid is much more easily penetrable and casts faint shadows. The urates cast stronger shadows than uric acid, but less strong than the oxalates and phosphates. Whether it was possible to detect a pure uric acid calculus in the kidney by means of the X-ray, he had been unable certainly to determine.

While experimenting with kidney, bladder and other stones, comparing their penetrability by the X-ray, he also made comparisons between the penetrability of uric acid stones and biliary calculi. He found that pure uric acid masses compared with biliary calculi of the same thickness cast shadows hardly to be distinguished in density one from the other.

As is very well known biliary calculi cast such faint shadows that their presence has only very rarely been detected by means of the X-rays. Oxalate of lime stones may usually be detected in the kidney and ureter by means of the X-rays, even in stout individuals, when the apparatus used is of good quality and in perfect working order. It is often necessary, however, to take several radiographs of the individual and to compare them.

In regard to the limit of size of an oxalate of lime stone, capable of being detected by means of the X-rays he said that in the case of a young woman of rather slender physique he had been able to detect the shadow of two stones situated, the one in the pelvis of the kidney and the other in the upper end of the ureter. These stones had each of them an oxalate of lime nucleus surrounded by a layer of uric acid. The larger of the two stones weighed about 20 grains. The smaller one weighed .75 of a grain. The shadows upon the plate were quite distinct. He referred to another instance of a man quite well nourished, in whom he was able to detect an oxalate of lime stone weighing a little more than one grain. The shadow of this stone occurred in the line of the ureter within three inches of the ureteral opening into the bladder. He had been able to see the shadow of this stone upon three separate plates taken at intervals of several weeks. Each successive picture showed the shadow of the stone at a lower point in the ureter. Soon after the last picture was taken this patient had a severe attack of pain. The pain ceased suddenly and within a day or two the stone was passed per urethram.

The difficulties in the way of making the diagnosis of kidney stone by means of the X-ray, he thought, were not generally appreciated by the medical profession. In order to take successful pictures of kidney stones very good apparatus was necessary, and all parts of it must be in perfect working order. Very large and expensive X-ray tubes were needed, and in his experience such tubes could only be used a very few times for this purpose. After two, or at the most three pictures had been taken with one tube, it seemed to lose its defining power in some way he did not understand, and efforts to take kidney-stone pictures with tubes already used several times for this purpose had resulted uniformly in failure. The expense, therefore, of making these pictures was, in his experience, very great. If long exposures or repeated exposures were made there was risk of burning the patient. He did not think one was justified in making more than one picture without an interval of ten days between the exposures.

Dr. Thomas H. Manley was especially struck with the difficulties attending diagnosis in these conditions as shown by the various reports made by the speakers who preceded him. He was reminded of an operation performed about one year ago. The patient had had a fulness upon the right side coming on suddenly without any urinary symptoms. The cystoscopic examination gave negative results. Doubtful symptoms were referred to the right groin low down. Everything was tried in making a diagnosis except one not mentioned. In this instance there were extensive adhesions and the organ was firmly fixed. Thinking he had a new growth to deal with he cut down upon the organ and found nothing but a large pocket of pus in a remnant of kidney. The ureter had been entirely obliterated. A simple puncture with the exploratory-needle would have established the true character of the mass in the beginning.

Renal Calculus.—Dr. J. A. Bodine presented a specimen of renal calculus which had been removed four weeks ago from a man fifty-five years of age. The history of his illness ran through a period of eight years; at the beginning of this period he began to have a dull, aching pain in his loin. During the first year he had one distinct attack of renal colic, and passed some gravel. The dull pain in the loin, while always present, at times was characterized by an acute exacerbation, which required opiates and rest in bed for relief. After a year the acute exacerbations lessened in frequency and severity, but the dull grinding pain continued. The patient, during the last five or six years, was frequently compelled to quit his station at the steering wheel of a steamer, during which times he found that he could ease the pain by lying down, placing his head lower than his feet. At no time was there any increased frequency of micturition, pain referable to the bladder, or any blood or pus in the urine. There was no fever, sweats, or signs of sepsis. During this time he was treated by a number of physicians. Frequent examinations of urine were made, and his physicians treated him for chronic Bright's disease.

About a year ago stone was suspected, and he was referred to Dr. Johnson for a radiograph. The negative was interpreted by Dr. Johnson as showing stone in the right kidney. At the time of operation his urine was normal in every respect, with the exception of a few blood cells under the microscope. There were no objective symptoms, the only subjective one was that of pain. The clinical history plus the assurance of the radiograph determined the operation. The kidney was delivered through an incision in the loin, and the stone could be felt lying loose in the pelvis. The gross appearance of the kidney was in every way healthy, possibly there was some accentuation in lobulation. An incision was made through the parenchyma along the convex surface, sufficiently large to admit introduction of the fingers for removal of the stone. This situation was decided on in preference to an incision into the pelvis, as it was believed to offer less liability of an urinary fistula. A bougie was introduced through the incision in the kidney and passed down the ureter into the bladder, showing that no stone obstructed the urinary outlet. The kidney was replaced and a piece of gauze brought out at the angle of the incision for drainage; the rest of the wound was sutured. The convalescence of the patient was as smooth as that following an interval appendicitis. In two weeks he was out of bed; in three weeks his wound was entirely healed.

This case was a beautiful example of a primary stone, without any traces of septic infection induced by its presence in the kidney. There were no signs of pyelitis, or congestion, yet the stone had existed there for seven or eight years. The shape of the stone was exactly right to act as a ball and socket valve, and it was too large to cause anuria by engaging in the ureteral orifice. No doubt, when the patient lay down and lowered his head, the stone fell away from the ureteral orifice, and thus eased the pain. Again, in the history of this case, it was noted that in the earlier years when the stone was smaller the acute attacks of pain were much more severe than in later years, when it had grown to its present size. This bore out the statement that the pain or danger in primary stone was in inverse ratio to its size.

An effort was made to obtain a chemical analysis of this stone, but the chemist reported that he could not furnish it. He was quite sure, however, that it was neither uric acid nor oxalate of lime, nor phosphatic concretions. Suggestions as to the real contents were solicited from the members. Sir Henry Thompson held that nineteen out of every twenty primary calculi were uric acid and the other one was oxalate of lime.

Exhibition of Specimens and Cases.—Dr. Charles H. Chetwood exhibited two pathological specimens of pus kidney.

Case I.—J. R., aged twenty-seven years. The patient's principal complaint on entering the hospital, Jan. 6, 1902, was severe pain in the right side. His urine was exceedingly purulent, his temperature 104° F.; he was tender in the right kidney region. The kidney could not be felt, but there was a large area of abnormal resistance in the kidney region. He gave a history of having suffered a severe strain while carrying a heavy trunk, soon after which he passed bloody urine and urinated with increased frequency. The pain in the side had persisted more or less ever since that time, which was four months before his admission to the hospital. He denied venereal disease. Examination for tubercle was negative. Lumbar nephrotomy was performed shortly after his entrance into the hospital. A large kidney abscess was found involving the pelvis and the renal parenchyma. At that time the pus was evacuated and the kidney drained. While his condition improved temporarily as a result of the nephrotomy, the subsequent condition of both wound and patient was unsatisfactory. Secondary nephrectomy was therefore performed two months later. Dr. Chetwood had for exhibition the specimen which he said was interesting in that it showed complete obliteration of the pelvis and occlusion of the ureter which had occurred since the primary operation.

Pyonephrosis.—The second specimen of pyonephrosis was one that Dr. Chetwood regretted he had failed to discover before death. The patient was a man sixty-three years of age, with every symptom referable to bladder and urethra. He had complained of urinary difficulty for ten or twenty years and was obviously a prostatic. He had been under the treatment of his family doctor and had become accustomed to the use of the catheter which he employed systematically several times a day. Dr. Chetwood first saw him on the 26th of November last, when he passed his water with great pain and difficulty every half hour day and night, sometimes requiring ten or fifteen minutes to complete the act; the stream was not projected. The residual urine was four or five ounces, exceedingly purulent, with most foul odor. His general condition was very bad; his pulse rapid and feeble; his tongue coated and dry; he was palpably septic. Dr. Chetwood had him prepared for perineal operation, with the object of affording drainage as rapidly as possible. After the perineum was opened a finger in the bladder determined a small-sized prostatic growth and a great deal of contracture of the neck of the bladder. The bar was cut through, a drainage tube inserted and systematic bladder washing instituted. The patient died five days after the operation without manifesting any tendency to revive from his septicemic condition.

Dr. Chetwood was fortunate enough to obtain the post-mortem specimens which were then exhibited. Examination of them showed the very large pus sac formed by the dilated pelvis with very little kidney substance remaining. This was evidently an ascending pyelitis resulting in pyonephrosis.

Postoperative Nephrectomy.—Dr. Chetwood exhibited a case which he said was another example of secondary nephrectomy following nephrotomy for pyonephrosis—or rather multiple abscess of the kidney. The patient was referred to Dr. Chetwood with possible renal calculus, although he had given no symptoms of renal colic. At that time he passed urine densely mingled with pus of a most foul odor. A large and symmetrical tumor could be palpated in the left kidney region. An oblique incision was made over this enlargement and a large quantity of pus of the same foul odor as that contained in the urine evacuated. No attempt was made to remove the kidney at that time. Two months later Dr. Chetwood performed a secondary nephrectomy and with great difficulty succeeded in removing what was left of the damaged organ. This specimen he did not preserve, as it showed nothing and had to be removed somewhat piecemeal on account of the disorganized condition of the tissues. The patient was present and appeared to be in robust health.

Dr. Charles H. Chetwood also showed this case, the history of which he had read at a previous meeting of the Section, the case being one of persistent hematuria of four years' duration. The laboratory urinary examination gave no evidence of any renal involvement. Cystoscopic examination, however, determined the blood to be of renal origin, small jets of blood being seen to emit from the right ureteral orifice. Exploratory nephrotomy was performed soon after the patient's admission into the hospital; the kidney was exposed and gave no gross evidence of disease. A small infarct was felt on the anterior surface near the pelvis, a portion of which was removed for pathological examination. As nothing further was found—the pelvis having been explored for stone—a small gauze drain was placed inside the pelvis and the lower pole of the kidney supported by packing. The kidney was not decapsulated, but the true capsule was split from its upper to its lower pole along the convex border. The patient made a good recovery and, while he had passed blood incessantly, and in large quantities for four years previous, there had been no blood in the urine since the operation, except after withdrawal of the gauze packing from the kidney.

Dr. Howard Lilienthal referred to one case of hematuria in which the hemorrhage was so severe that it caused the death of the patient. The patient was submitted to a cystoscopic examination which yielded no result because of the enormous amount of blood constantly filling the bladder. It was necessary to do a suprapubic cystotomy. The blood was seen to come in spurts from the right ureter. A nephrotomy was performed on the right kidney, but nothing was found. The hemorrhage did not cease. The kidney appeared to be normal. At last a bougie was introduced through the urethra into the ureter, and this seemed to check the hemorrhage, but the patient finally died of an acute anemia. A full and complete post-mortem failed to show anything which would account for the hemorrhage. There was not found any ulceration or congestion. The bleeding probably came from the substance of the kidney, which was affected by a mild form of diffuse nephritis.

Dr. F. Tilden Brown said that he had in connection with Dr. McBurney a similar experience as the one just related, in which the patient was *in extremis* from kidney bleeding. A nephrectomy was required to save the patient. A careful examination of the kidney by the best pathologists showed nothing further than a hemorrhagic pyelitis. There had been one similar but not nearly so severe attack about three years before. Renal calculus had then been diagnosed. At the second attack she was in the third month of pregnancy, and fortunately aborted three weeks after nephrectomy. Now nine years since the woman is in excellent health.

Dr. Alexander B. Johnson said that, several years ago he saw a case of bleeding from both ureters. The woman had had some half dozen such attacks, quite severe, during the course of three or four years, *i.e.*, the urine becoming bloody. At the time she entered the hospital her urine was very bloody, and the patient was very anemic. Cystoscopic examination showed that the blood came from both ureters, both being catheterized. At a subsequent time the kidneys were exposed and both were apparently normal. Nothing was done and the wound was closed. The woman remained in the hospital until the wound healed, bleeding from time to time. This finally ceased and she left the hospital and he had not heard of her since.

Dr. Charles H. Chetwood referred to some of the points brought out in his paper on "Some Facts in a Case of Hematuria," which he had read before the Section, November 19. The case was pronounced one of essential hematuria. He had given, without benefit, the various internal remedies alleged to be efficacious in this condition. But after the operation the bleeding ceased promptly and had not returned. He believed that in most of the cases of so-called essential hematuria a minor lesion of the kidney was present, although not discovered in the urine or in the pathological examination of the kidney.

Cystic Degeneration of Both Kidneys.—Dr. A. V. Moschcowitz presented two cases of anuria: *Case I.* The patient was forty-three years old, and was admitted for the first time to Mt. Sinai Hospital, on Dr. Gerster's service, December 31, 1901. The patient gave the following history: During the past eight weeks he has had more or less trouble in urinating. One week prior to admission he was unable to pass his urine and his family physician removed by catheter about a quart of urine. He was fairly free of trouble for the next week when he again complained of trouble in voiding his urine. He again was catheterized, but this time no urine was found in the bladder and he was then admitted to the hospital. At this time of admission the bladder was absolutely empty. Upon examination a large mass was found occupying the region of the left kidney and a probable diagnosis was made at that time of a calculous pyelonephritis upon the left side and a reflex anuria upon the right side. The patient was placed upon diuretics, hot packs, etc. As a result of this treatment he passed six ounces the first day, the next day, 128 ounces, the third day, 97 ounces; on the fourth day an epidemic of diphtheria broke out in the ward and the patient was discharged with instructions to return, should the trouble return. He was readmitted January 11, with a history of having passed no urine for 18 hours. The bladder was found to be empty. He was placed upon the same treatment as before but without result. Twenty hours after admission, his condition becoming so serious, that it was deemed best to do something for him. A nephrotomy was done on the left side, opening the kidney substance, and there were found three calculi in the pelvis of the kidney. Little hemorrhage attended the operation. The operation was done at 4 A.M., under a poor light. It was expected that improvement would follow, yet no urine appeared in the bladder and very little urine was secreted into the dressing. Twelve hours later the patient was brought to the operating room and with the presumption that there was a calculous pyelonephritis on the left side and reflex suppression of urine on the other side, the right kidney was incised, a nephrotomy being done, both the capsule and the kidney parenchyma were incised, when the true nature of affairs was seen. There was a cystic degeneration of the right kidney. The kidney was incised and drained. Some improvement followed, the patient passing a considerable quantity of urine from both kidneys. Six days afterward the patient died from uremia. The left kidney showed a number of cysts but no further calculi. The right kidney was in the same condition, but there was also, low in the ureter, a calculus which completely blocked the exit of urine.

Anuria Due to Floating Kidney.—*Case II.* Dr. A. V. Moschcowitz presented another specimen which was removed from a patient for complete anuria. The woman was twenty-three years old, and was brought to the hospital March, 1901, giving the history that she had passed no urine for three days, being catheterized outside the hospital. The woman was very sick. A large mass was found in the region of the left kidney, and a diagnosis of a calculous pyelonephritis was made and a reflex anuria on the opposite side. The patient was brought to the operating room, the left kidney was cut down upon, and there was found a large hydronephrotic sac, containing 1,000 cm. of more or less purulent fluid. No stone was found in the pelvis of the kidney. The opposite kidney was then exposed and incised and a small pus sac found. Large amounts of urine passed from the left side and the patient did very well for the first few days, when the temperature began to rise and was probably due to the poor drainage of the right kidney and on this account the right kidney was extirpated twelve days after this first nephrotomy. Without a microscopical examination it would have been difficult to recognize the kidney as such. The patient made a good recovery, urinating voluntarily sixteen days after the operation. The wound closed April 21, and the patient was discharged cured May 8.

Calculous Pyelonephritis.—Dr. A. V. Moschcowitz also presented this specimen which had been removed December 22 from a patient who had gone from one doctor to another, from one dispensary to another, with a diagnosis always made of floating kidney. A urine analysis had never been made. When she came to his office she gave a history of trouble with micturition. The urine voided looked more like pea-soup than urine. On cystoscoping the patient, clear urine was obtained from the left side and practically pure pus on the right side. The patient was admitted to the hospital and the right kidney was removed. This kidney was found to contain a large stone which blocked the ureter upon the right side and in a pocket of this kidney were found a number of small calculi.

Dr. A. V. Moschcowitz said that personally he had never seen such a case of reflex anuria on one side caused by the presence of a calculus upon the other, but Israel had reported some such cases in his book on kidney-surgery. He attempted to explain the anuria in the second case in the following manner. The patient had a floating left kidney which, eventually from the increased weight of the organ, sank more and more, bending the ureter as it came from the pelvis of the kidney eventually causing a false insertion of the ureter. The ureter was so inserted finally that it was relatively too high up for good drainage.

Dr. F. Tilden Brown said he had had a similar experience last summer. Two brothers were brought at three weeks' interval to the Presbyterian Hospital with perirenal abscess of the left side. One was operated on by Dr. Woolsey. A quantity of green-colored pus evacuated. Three weeks later the other brother came to the speaker's service with a similar condition of the right side; he gave a history of boils upon the back of the neck. The loin was freely opened to find, if possible, any bony or immediately adjoining source of origin of the abscess, but without success. The wound healed promptly. Cultures showed the presence of staphylococci.

Dr. A. Ernest Gallant deprecated the custom of performing nephropexies for movable kidneys without learning the actual condition of the kidneys themselves.

He thought it was time to call a halt in sewing up these kidneys without first gauging their functional activity from a study of the symptoms and the character of the urine, and if this is found abnormal, to carefully ascertain which part of the urinary tract is at fault; in order to intelligently apply the appropriate remedy—be it medical, mechanical, or surgical. Healthy, mobile kidneys, with or without gastro-enteroptosis, can be supported by a properly constructed corset; while diseased kidneys demand operation for removal of the cause thereof, or enucleation of the organ, if irreparable damage has been done.

A Case of Ureteral Calculus.—Dr. J. Riddle Goffe presented a specimen of an unusually large calculus removed from a patient last April. It was situated at the opening of the ureter and blocked it, giving rise to a pyelonephritis. The patient was forty-one years old, married 20 years, and had nine children. She had been in good health until about eight months before she fell into his hands. She had been treated by several physicians for malaria, on account of slight chills and some temperature. Up to within two weeks she had gotten along comfortably; then she was taken with a severe chill, lasting two days, and she remained in bed the rest of the time. After going to bed she noticed a tumor in her abdomen. The physician who examined her made a diagnosis of ovarian cyst, and she was sent to the New York Polyclinic. Examination there revealed a large tumor about the site of the kidney which extended down into the pelvis, and it was a nice point to discriminate whether the tumor was attached to the uterus and appendages or not. After one or two examinations it was decided that it was a tumor of the kidney. The urine was normal. An oblique lumbar incision was made and an immense tumor, full of creamy foul-smelling pus, was found. After evacuating its contents the kidney and three inches of the ureter was removed *en masse*. The kidney was lobulated, of immense size and contained one large calculus wedged in the ureteral opening. The specimen and stone were shown. The stone, an irregular cone or strawberry shaped mass, measured 2¼ cm. in length by one cm. at the base, and is probably phosphatic in its composition. The tumor was firmly adherent on all sides but by dissecting the abdominal peritoneum from its abdominal wall it became possible to extend the incision well to the front without entering the peritoneal cavity and room was thus afforded for manipulation. The pedicle was transfixed and ligated with chromacized gut No. 4. The patient has recovered her health to a degree surpassing that of many years. Urine is abundant and satisfactory.

Case of Tuberculous Abscess of Kidney.—Dr. J. Riddle Goffe presented a patient who had been sent to him seven years ago last October for operation for an ovarian tumor. The analysis of the urine showed it to be in good condition except that it contained albumin in large quantities. Realizing that frequently from pressure alone albumin may appear in the urine in cases of large ovarian tumors he paid little attention to it. He made a median incision and removed a large ovarian tumor of the left side; this tumor contained about one gallon of fluid. Watching the convalescence very carefully he noted that there was a considerable quantity of pus in the urine with some irritability of the bladder. He submitted her to a careful cystoscopic examination; he got clear urine from the left side but nothing from the right side which was difficult to catheterize. There was a large tumor of the right kidney. An oblique lumbar incision was made and the right kidney was removed which measured eight to nine inches in its longitudinal direction, was distinctly lobulated and filled with pus that was loaded with tubercle bacilli. The patient recovered. She was placed upon liquid peptonoids with creosote and the treatment was continued for 1½ years. While in the hospital she took up nursing as a profession and had since engaged as a trained nurse.

Previous history shows that she was born in Ireland but came to this country when a child and has lived along the Hudson River in very healthy places. Her father and mother are still living and in good health. She has two brothers and sisters, living and healthy. There was no history of tuberculosis in the family. How the infection came about was a subject for study. Examination of the urine yesterday showed the remaining kidney to be in good condition and doing double duty satisfactorily. No tubercle bacilli are to be found in the urine.

Pyemic Kidney.—Dr. Howard Lilienthal exhibited this specimen, which was removed from T. E. S., twenty years old, a cadet. His family history was negative. He had varicella, measles, and mumps when a child. One and a half years ago he was confined to his bed with swelling of the left testis. In September, 1902, he became much run down and had a crop of very painful and rather large boils which finally disappeared. The latter part of October the patient began to have vague pain in right part of epigastrium with nothing on physical examination to account for it, excepting a rigidity of the right abdominal wall which disappeared in three weeks. There was continuous elevation of temperature and the patient began to emaciate. The pain seemed in some way connected with the digestion and was relieved to a certain degree by restriction of diet. The urine was normal. The pain gradually became lumbar and finally became worse in the left lumbar region. There was afternoon rise of temperature as high as 102.5° F. Morphine was required for the pain. About three weeks after the onset of the disease the urine was noted to contain shreds and a little pus and mucus which gradually increased in quantity until the urine became quite turbid. The microscope showed only pus and no tubercle bacilli. Most of the sediment was in the latter part of the urine. During this time the patient was in charge of the Army Surgeons, Maj. Glennan and Col. Havard, who called Dr. Manges in consultation. Gradually dulness, then flatness appeared in the left side and aspiration was suggested. The patient was transferred to Dr. Lilienthal's service at Mt. Sinai Hospital, where he became a private patient. On Dec. 13 an attempt was made to use the cystoscope but there was a stricture in the pendulous urethra, which in the presence of septic urine, it was not considered wise to divide. Incision in the lumbar region now evacuated an abscess of about four ounces capacity, but the symptoms not abating, nephrectomy was done on Dec. 18. The kidney was found to be riddled with abscesses from the size of a pin-head to a walnut. The pelvis was filled with pus, many abscesses having broken through into pelvis. The patient made an uneventful recovery and was discharged cured January 19.

Movable Kidney with an Acute Twist of the Pedicle.—Dr. Howard Lilienthal presented this specimen, which he had removed from E. C., sixty-five years old, a patient of Dr. Hauswirth. Past history, negative. Present attack began seven days ago with a sudden severe right iliac pain. The patient was constipated. Vomiting occurred. There was no rise in temperature until December 24, when it became slightly elevated. The pain and tenderness in the right side increased and the swelling appeared after thorough purgation in right hypochondrium, extending downward almost to iliac region. The swelling was tense and very painful on the slightest palpation. It felt like a perinephritic mass and was thought to be an abscess. The urine, about thirty ounces per day, contained considerable sediment of pus with a few red blood cells. The tongue was dry and coated. Symptoms of cystitis had been present for some time with infrequent and painful urination. Dr. Lilienthal saw the patient on December 25 and diagnosticated abscess with the location probably about the right kidney and he advised an immediate operation. A lumbar incision was made, parallel with the iliac crest, and the mass aspirated. A small amount of pure blood was noted. The perirenal fat was hard, indurated and adherent to the peritoneum and parietes. The tumor was found to be a hard, tense kidney with a twisted pedicle. The kidney was in a transverse position. The number of turns could not be determined and, as the organ was much congested and the surrounding fat apparently necrotic, a nephrectomy was performed. The kidney was found to be somewhat enlarged. Its surface was dark and hemorrhagic. It was hard upon section. The cortex was pale and edematous. No pus was found. There was no dilatation of pelvis. The uric acid salts stained the tubules in radiating reddish lines, a condition, when associated with edema, supposed by pathologists to be pathognomonic of acute obstruction of the ureter. The patient recovered.

Dr. Ramon Guiteras said that in the present state of kidney surgery, before operating upon the kidney, or kidneys, the ureters should first be catheterized. If the operator was not able to do this, he should have some one do it who was sufficiently skilled in its performance.

He said that Dr. Goffe's case had a lobulated kidney and a lobulated kidney was liable to be a single kidney. Inside of one year he knew of three cases of single kidney, and each one was lobulated. Therefore, any man who attempts renal surgery, and cuts down upon a lobulated kidney, and who has not been able to catheterize the ureter on the opposite side, should first make a lumbar incision to ascertain whether or not the other kidney is present.

Dr. Howard Lilienthal said he was obliged to take issue with Dr. Guiteras, because he did not believe it was in every case absolutely necessary to catheterize both ureters. He had gone over this matter in a paper which he had read and which was published in the *Journal of Dermatology and Genito-Urinary Diseases,* about two years ago.

Dr. J. Riddle Goffe said that, in the case of the large kidney tumor, the woman was secreting an abundant amount of urine which was normal. Therefore, it was logical to infer that there was another kidney and that it was doing proper work.

In the case of the tuberculous kidney he succeeded in catheterizing the healthy kidney but he did not deem it necessary to attempt to catheterize the ureter on the diseased side. In both cases it was evident that the diseased kidney was destroyed or at least had been deprived of all function.

Dr. Roman Guiteras, in referring to the technic, said that two years ago he wrote a paper on prostatectomy in which he mentioned the technic, as described by Dr. Johnson. At the time he thought he originated it but he had later found what Dr. Johnson and Dr. Bryson, of St. Louis, had been before him. This technic he considered of great help in doing prostatectomies. He thought that with the proper instruments and apparatus the prostate could be pushed down sufficiently to enable one to enucleate the prostate without making a suprapubic incision. He said it was well known that patients with the suprapubic incision did not do as well as those without it. Again, if the prostate could be taken out through a posterior urethra the result would be better than if one went through the external capsule. With regard to the results of prostatectomy it will often be found that, after the prostate has been removed, there will be left behind an enormous mass which will take a long time to be absorbed; in some cases the external capsule will be found to be one-half an inch thick. Often, five or six years after doing a prostatectomy, the patient will still continue to urinate from five to ten times during the night; yet apparently the result was a good one.

Discussion of Dr. Johnson's Paper.—Dr. Charles H. Chetwood stated that he desired no less strongly than the reader of the paper to obtain authentic reports regarding the ultimate results following operations for prostatic hypertrophy. If such could be obtained he believed they would demonstrate the fact that, in order to obtain the best results in a given case and also to show the lowest rate of mortality, it was necessary to remove only that portion of the prostate which interfered with proper bladder drainage. The reader of the paper had referred to the secondary changes that took place in the structures adjacent to the bladder as a result of prostatic hypertrophy and, in consideration of these degenerative changes, all prostatics, Dr. Chetwood said, might be divided into two general classes: (1) Those met with early and before serious secondary changes occurred, and (2) those seen after such secondary changes had taken place. In those cases which were seen early there was little doubt that moderate extirpation—partial removal of the obstructing prostate—was all that was necessary to accomplish perfect restoration of function and cessation of symptoms; and in later cases, when extensive degenerative changes had taken place, complete restoration of function could not always be obtained, no matter how much of the gland was removed. In both instances he believed it better and safer to remove only that portion interfering with bladder drainage. He had operated upon a greater proportion of his prostatic cases by a modification of perineal prostatectomy and the Bottini method. By opening the perineum a complete examination of the prostate was made and the exact amount of prostatic growth determined. This was removed through the perineum by means of a special galvanocautery, and the finger again introduced to ascertain the result. By this method was insured perfect bladder drainage, an advantage which could not be over-estimated.

Dr. Howard Lilienthal, referring to the ability of these patients to have sexual intercourse, said that he had performed the operation about 15 times. Among these there were three patients, one sixty years old, another fifty-eight years old, and the third, fifty-two years old, whom he had followed for a year and a half, and who were all potent and obtained satisfaction from such intercourse. He recalled eight patients upon whom he had operated over one year ago and they were all well, urinating normally and did not get up more than once or twice during the night to urinate. Their ages ranged from fifty-two to eighty years at the time of operation. The patient, seventy-five years old, was operated upon four years ago and he was perfectly well. Prior to operation he had not passed a drop of urine without the aid of catheter for 20 years. He had had two cases of sacculated bladder, both marked cases, a condition which Thomson had pointed out as being fatal to perfect micturition. These two patients now micturated perfectly. Out of his 15 cases he had had one death; at the time of operation the patient was in an uremic condition and something had to be done. A suprapubic cystotomy and quick prostatectomy was performed, but the patient died within twenty-four hours. The suprapubic operation was the one of choice, and not the perineal. In those cases where he had done the combined operation he had cause to regret it.

Dr. B. Lapowski said that too much attention was being devoted at the present time to new methods, new technics, new instruments, etc., and not enough to learning the condition of the prostatic function in these cases of hypertrophied prostates. It was important that one should know whether or not the prostate before operation was functionating properly; whether the fluid from the prostate was alkaline or acid in reaction; whether the semen contained living spermatozoa or not and, if so, if they remained alive for any length of time. Then when only a partial removal of the prostate took place, whether the function of the remaining prostate remained the same as before the operation.

Dr. Frederick Kammerer said that since last June he had had nine cases and, in all of them, he had enucleated the prostate through the perineal route. He had but one death among these and this was in a man aged seventy-two years who, at the time of operation, was suffering from marked arteriosclerosis. Five days after operation gangrene developed in the wound surfaces and the patient died from sepsis four weeks later. In the remaining eight cases one notable result had been achieved by the operation: there was practically no residual urine. Nor did the speaker observe any incontinence after operation. He believed that the prostate could be reached through the perineum alone, without any suprapubic incision. With the necessary instruments he did not see why one should not be able to pull the prostate down into the perineum, if a suitable incision had been made. He thought this was the easiest operation for removing the prostate. A curved incision in the perineum should always be made and, with one finger in the rectum, one could quickly pass between the bulb and the anterior rectal wall and expose the posterior surface of the prostate.

With regard to sexual function, several of his patients had told him that they had no more erections. In enucleating the prostate one necessarily tore the seminal vesicles and the vasa deferentia or the ejaculatory ducts and, therefore, further sexual intercourse was probably impossible.

Dr. A. A. Berg said that he considered the perineal operation safe in all cases without the aid of the suprapubic incision. He had had three cases, two of them with the prostates situated high up, and he had experienced absolutely no difficulty in delivering the entire prostates through the perineal wound alone. The finger covered by a glove was hooked around the prostate through the rectum and was kept there until the posterior surface of the organ was exposed and the capsule incised. Such a procedure gave satisfaction.

Dr. Kammerer, in answer to Dr. Lilienthal said there could be no difference in the final result, as regards sexual function, whether the suprapubic or the perineal operation had been done, provided complete prostatectomy had been the operation. In both instances the enucleation must be done in the same plane, beneath the so-called capsule of the prostate, and no less injury to the seminal vesicles and vasa deferentia would therefore result from the suprapubic than from the perineal operation.

Dr. Alexander B. Johnson said that this question of dribbling and sexual potency was especially interesting. All the patients did leak temporarily, that is, for nearly six weeks, and but one patient for a longer period. In every case this leaking finally ceased. In four of these individuals it made no difference how much water was contained in the bladder there was no dribbling. Regarding the matter of sexual potency, one man was really older than his years, being only sixty-four and had had no erections for several years previous to the operation and had had none since. The first patient operated upon in 1899 told him that since the operation he had erections but no desire; his wife was an old lady and he had had no intercourse since the operation. Another patient told him that he had no erections since the operation. He was a vigorous healthy-looking man and, before the operation, had erections with ordinary frequency. Another patient told him that he had partial erections but not sufficient to have intercourse. Before operation he had erections sufficient for this purpose. With regard to the way to approach the prostate he agreed with those who believed that not all cases of prostatectomy could be performed through the perineum. Ten days ago he had a case where it would have been impossible to get the prostate out without a suprapubic incision. This individual had been operated upon before by the suprapubic route and a portion of the prostate removed; at this time he had also had perineal drainage instituted. The prostate was imbedded in scar tissue. After exercising sufficient force with the right index finger in the perineum and two fingers in the bladder through the suprapubic opening, working for one-half hour, he got the prostate out.

OBSTETRICAL SOCIETY OF PHILADELPHIA.

Stated Meeting, January 2, 1903.

The President, Dr. John M. Fisher, in the Chair.

Fibromyoma of Round Ligament.—Dr. Melvin M. Franklin reported this case occurring in a patient twenty-nine years of age. The tumor, which was about the size of a walnut, was situated in the inguinal canal just outside of the internal abdominal ring. Pressure on the growth caused considerable pain and nausea. The tenderness was markedly increased during menstruation. The periods had always been normal and she suffered with dysmenorrhea. On operation it was found to be a hard fibrous tumor of the round ligament. This was excised and the canal properly closed. The pathological findings proved it to be a fibromyoma of the round ligament.

Dr. Krusen said it seems to him that Dr. Franklin had presented for the Society one of the rarer forms of neoplasm which may attack the genital organs. It is interesting both from a diagnostic and pathologic standpoint. It is interesting from a diagnostic standpoint, because it may be mistaken for lipoma, ovarian or intestinal hernia or enlarged lymph glands. He has operated upon two cases of fatty tumors which were rather difficult to diagnosticate because they were in this situation. Another point in diagnosis is the occurrence of the omental hernia coming down and being mistaken for the fibromyoma at this point. From the pathologic standpoint the subject is interesting in regard to the varieties of tumors that may affect the round ligament and also in regard to the size of some tumors that may originate from a small amount of muscular tissue. Cullen, in 1896, in the *Johns Hopkins Bulletin*, Vol. 7, page 112, reports an adenomyoma in a woman thirty-seven years of age. The tumor had been growing for eight years. Two years previous to the time of operation the tumor had grown rapidly. An incision was made over the growth and it was removed and when dissected it was found 3½ cm. long and 3 cm. wide. Microscopical examination through the tumor showed areas of rather translucent character. There was a mucous membrane similar to the normal uterine mucosa. Such findings, may, Dr. Krusen thinks, throw some light upon the origin of the growths. Leopold has reported a case of lymphangeictatic myoma; Sanger a case of sarcoma of the round ligament. Another interesting point is that during pregnancy these tumors often increase in size and also during menstruation. This probably indicates their relation to the uterus. And the most frequent situation is upon the right side. As an illustration of how a small muscular fiber may give rise to a large growth, Doran reports a 16-pound tumor arising from the tiny ovarian ligament. This shows how in the mere presence of fibrous tissue large growths may proliferate.

Dr. Maier said he would like to ask Dr. Krusen whether the tumor he had just mentioned was situated in the round ligament, as it came through the inguinal canal, or in the broad ligament.

Dr. Krusen answered that they were all round-ligament tumors external to the ring.

Dr. E. E. Montgomery remarked that he has been greatly interested in hearing Dr. Franklin's paper and felt that the Society is indebted to him for the presentation of so rare a case. Judging from his own experience he should say the tumors of the round ligament are very rare. He has never seen one but recognized the fact that his experience has not been sufficiently large to afford evidence that such growths do not occur. One can readily realize that in the round ligament, which contains both muscular structure and blood vessels, there is ample material for the development of this class of tumors, whether one assigns their origin to the muscular structure of the round ligament itself or to the muscular wall of the blood vessels. Their infrequency in the round ligament is readily explained by the fact that the structure is rarely subject to injury. The point of diagnosis is one of very great interest. He can readily see how such a growth could be mistaken for conditions such as were supposed in this individual case. In listening to the paper he at first thought the condition had followed an operation upon the round ligament, as the Doctor said the ligament was shortened, but this was evidently due to the growth taking up the slack of the ligament.

Dr. John M. Fisher said he believes that Dr. Clark, a few years ago, reported a case of coincident sarcoma of the uterus with fibromyoma of the round ligament, demonstrating the importance of making a microscopical examination. The case was either one of fibromyoma of the uterus and sarcoma of the round ligament or sarcoma of the uterus and fibromyoma of the round ligament. He thinks the latter was the condition. It is an interesting point to note in this particular case.

Preliminary Report of an Operation for Abdominal Pregnancy of Twenty-One Months' Standing.—Dr. C. P. Noble reported the clinical history of this patient, who was a multipara, thirty years of age. She missed her menstrual period in March, 1901; two weeks later she was taken with a sharp, agonizing pain in the right iliac region, diagnosed by her physician as appendicitis, and was in bed for three weeks. Two months subsequent to the date of expected labor, she consulted a gynecological dispensary, where a diagnosis of "tumor" was made, and medicine given "to dissolve it." She remained under this treatment for three months. She was finally sent to the Kensington Hospital for Women, Philadelphia, with a diagnosis of fibroid. Dr. Noble made a presumptive diagnosis of abdominal pregnancy, and verified the diagnosis by abdominal section. The fetus occupied the left side of the abdomen extending into the pelvis, the uterus was pushed to the right and elevated. The round ligament and tube ran over the face of the "tumor." The sac was so thick that it was impossible to outline the fetal parts. The ovarian and uterine vessels on the involved side were ligated, the fetus and sac elevated out of the pelvis and the lower end of the mass turned upward. By getting at the mesentery vessels from below and behind it was possible to control the bleeding without difficulty. The uterus was not removed. The patient made a satisfactory recovery.

Discussion on Dr. Noble's Paper.—Dr. E. E. Montgomery said that the case presented by Dr. Noble is one of very great interest from a diagnostic standpoint. Everyone who has had an opportunity of observing a large number of patients appreciates the frequency of cases which will come under his observation where it is difficult to determine whether he has to deal with a pregnancy, fibroid tumor or other abdominal growths. He remembers a case which came under his observation years ago at Jefferson Hospital, of a woman who had gone fifteen months from the time she conceived without delivery. Two months subsequent to her conception she had what she supposed to be an abortion. There was a discharge of blood clots and she suffered great pain. A bloody discharge continued for some weeks subsequently. A few months later she recognized fetal life and again became reconciled to the fact that she was pregnant. At the completion of what should have been the normal period of gestation, however, labor did not occur. At the time the patient came under his observation she presented a tumor which filled the abdomen to nearly the size of a woman at full term of pregnancy. Examination revealed fluctuation, while percussion over the tumor gave resonance. On examination per vaginam the uterus could be recognized situated in front and somewhat to the left of the mass. While a portion of the tumor felt solid, one was unable to palpate and recognize distinctly its parts. The history of the case and the conditions present led him to form the diagnosis of ectopic gestation, in which the fetus had undergone maceration and decomposition and the resonance in the sac was the result of the gas thus formed. Upon opening the abdomen he found a condition similar to that which he had expected. The uterus was in front of the mass, the tumor occupied the abdomen above and the wall of this tumor was made up of a membranous sac to which the placenta was attached at the upper part. The placenta was without vitality, was easily pulled off with the portion of the sac to which it was attached and without hemorrhage. The entire lining membrane of the sac was covered with macerated material. With the removal of the fetus the sac was thoroughly cleansed, stitched to the abdominal walls and packed with iodoform gauze. The intestines were closely adherent to it and formed a part of the sac wall so it was impossible to attempt its removal. The convalescence was slow; patient finally recovered. The second case which comes to his mind is that of the wife of a physician in the upper part of the State. On examination a tumor was recognized at one side of the uterus which filled up the pelvis. The history and the examination of the case led him to unhesitatingly pronounce it a fibroid tumor. It had been in existence for two years. The patient was unwilling to submit to operation, became pregnant and gave birth to a child without interference to the sac, and so far as he knows, she still carries it. Another patient treated at the Jefferson Hospital is of diagnostic interest. She had a mass which had been pronounced pregnancy by several physicians. One physician, an eminent gynecologist in the city pronounced this a pregnancy and saw the patient several times during the supposed gestation. The woman, however, did not attain to the size she supposed to be proper, and the time passed beyond which labor should occur. She was brought to the hospital and even then the growth was considered a delayed pregnancy. There was found situated in the vagina a mass the size of a fetal head, so divided as to lead to the belief that the fontanelles could be felt between the masses. On examination, over the abdomen a mass could be pushed away and felt to rebound against the hand. This was supposed to be the body of the fetus. In examining this patient, however, he felt satisfied from the surfaces intervening between the vaginal mass and the finger that it could not be within the uterus. If it was a fetus it was evidently situated anterior to that organ. He hardly believed that he would likely find an ectopic gestation in that situation. The sensation of free movement of the upper part was due to the fact that the tumor was connected with the fundus of the uterus by a rather thick, yet flexible pedicle which permitted the fundus to be pushed away and to return against the hand. The latter was favored by a considerable amount of ascites. As soon as the abdomen was opened a considerable quantity of fluid was discharged and the mass projected into the wound. A number of fibroid tumors occupied the body of the uterus. He thinks these cases indicate the difficulty in diagnosis which will sometimes lead the patient to go for some length of time under the observation of careful men and they be mistaken for other conditions.

Dr. Krusen said that Dr. Noble's interesting case recalls a post-mortem which he had in 1893, while a resident at Jefferson Hospital. He had the opportunity, through the courtesy of Dr. Hearn, of making a post-mortem in the case of a patient in the northern part of this city. The abdomen had been gradually increasing in size for ten months and no menstruation had been present for that time. The patient had been seen before, in consultation, by the late Professor Parvin, and the condition was such that operation was thought inadvisable. The patient died and upon post-mortem there was found within the abdominal cavity a full-sized fetus, larger than the size of a baby a month old. A hematoma occupied the position of the uterus. The head of the fetus was directly under the spleen. The case illustrates the tolerance of the peritoneum to the development of the fetus. This was a case in which undoubtedly rupture had occurred. The hemorrhage had not been such as to produce death and the fetus had gone on to full development, weighing over ten pounds. The specimen is now in the museum of the Jefferson Hospital. The very interesting and perplexing question to the surgeon is the treatment of the live placenta in cases of ectopic gestation. He had had an opportunity in two cases of having to contend with this difficulty. He thinks Dr. Noble is to be congratulated upon his success in this case.

Dr. C. C. Norris said he thinks the specimen is a very interesting one indeed. He had never seen one so large. While a resident in Baltimore he saw one specimen somewhat smaller, which had been in the abdomen for nine or ten years.

Dr. Noble, in closing, remarked that the point raised by Dr. Krusen is, of course, the crucial one—how to deal with the hemorrhage. These cases are so rare that there are very few of the profession who have the opportunity to acquire views from practice. This is the first full-term pregnancy of this kind that he had ever seen. He had operated upon nearly a hundred cases of ectopic pregnancy, but this is the first one advanced beyond the fourth month.

He thinks it is best to enucleate the whole sac, provided one can do preliminary ligation. If the placenta is attached to the intestines one knows that preliminary ligation cannot be done. On the other hand, if the placenta is in the pelvis one knows perfectly well how to deal with the ovarian and uterine arteries or with the anterior branch of the internal iliac. He should prefer to enucleate the sac under those circumstances. In a case having its blood supply from the mesenteric vessels his own action would be to pack the sac with gauze and leave it.

BOOK REVIEWS.

BACTERIOLOGICAL TECHNIQUE. A Laboratory Guide for the Medical, Dental and Technical Student. By J. W. H. EYRE, M.D., F.R.S., Edin., Bacteriologist to Guy's Hospital, and Lecturer on Bacteriology at the Medical and Dental Schools, etc. Octavo of 375 pages with 170 illustrations. W. B. Saunders & Co., Philadelphia and London. Cloth, $2.50 *net*.

THIS excellent book of Dr. Eyre fills a long-felt want, for while there are plenty of good works on Bacteriology, the technic is neglected by most. It is the same mistake which is made in so many medical schools; the students receive very excellent instruction in the fundamental principles of the science itself, but are not able to make culture media when they graduate. The excellent terminology of Chester has been adopted in the book, which speaks well for its thoroughly modern tendency. The chapters on the bacteriological examination of air, water and the various food products, will make the book a very valuable one for technical students. Of the many laboratory guides constantly being issued, this book is undoubtedly one of the best that has reached us.

TEXT-BOOK OF MEDICAL JURISPRUDENCE AND TOXICOLOGY. By JOHN J. REESE. Sixth Edition. Revised by HENRY LEFFMANN, A.M., M.D., Professor of Chemistry and Toxicology in the Woman's Medical College of Pennsylvania. P. Blakiston's Son & Co., Philadelphia.

IT is particularly from the standpoint of recent advances in toxicology that the changes in this new edition should be viewed. The new synthetic drugs have been many and their detection both from the clinical and chemical sides has become imperative. Their exhaustive treatment in this work will render it of great service.

Phenol poisoning is daily becoming more and more common. An efficient treatment is much to be desired and the reviser brings out the latest and best presentation of modern views on this subject.

That portion of the book devoted to medical jurisprudence lags behind the more technical side of toxicology but it remains a safe and concise presentation of this important go-between of law and medicine.

BOOKS RECEIVED.

The MEDICAL NEWS *acknowledges the receipt of the following new publications. Reviews of those possessing special interest for the readers of the* MEDICAL NEWS *will shortly appear.*

MEMORANDA ON POISONS. By Henry Leffmann. 12mo, 177 pages. P. Blakiston's Son & Co., Philadelphia.

PROGRESSIVE MEDICINE. Vol. IV. Dec. 1902. 8vo, 422 pages. Illustrated. Lea Brothers & Co., Philadelphia and New York.

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ORIGINAL ARTICLES.

PERIDUODENAL ABSCESS SECONDARY TO ULCER OF THE DUODENUM.[*]

BY WILLIAM SEAMAN BAINBRIDGE, M.S., M.D.,

OF NEW YORK.

PERFORATIVE ulcer of the alimentary tract, involving the general peritoneal cavity, has of recent years deservedly received considerable attention. Although our knowledge is still far from complete, the time devoted to the subject has already yielded some very gratifying results. With increased data earlier diagnoses have in many instances been possible, and in some cases surgery has accomplished brilliant cures. Distinct advance has been made not only in typhoid and gastric perforations, but also in duodenal ulcer. Weir points out that the mortality in cases of perforation of the first portion of the small intestine was seventy to eighty per cent. But since 1898 operations for general peritonitis and suture of the perforation have reduced this, according to the length of time between the perforation and the operative interference, to thirty-three to sixty per cent. Moynihan, and Perkins and Wallace diagnose only one case each of perforative ulcer out of fifty-one, and in eighteen of these the clinical picture was such a perfect copy of perforative appendicitis that the operation was performed with the firm belief that there was appendicular disease. Others have experienced like difficulties in reaching a diagnosis, and we must frankly admit that with our present knowledge, in the vast majority of cases, the diagnosis must be general peritonitis, with the site of the perforation undetermined.

When we turn to the form of perforative ulcer of the duodenum, which does not involve the general cavity of the peritoneum, we find there is very scant information in medical literature. The subject is dealt with rather incidentally, and many important facts are either absent or stated too vaguely to be of real value. Although this disease is comparatively rare, yet it does occur often enough to be carefully studied and kept in mind as a distinct possibility. Maydl, writing in 1894 upon subphrenic abscess, collected 179 cases, of which six were due to perforative ulcer of the duodenum. There are, including the author's case reported below, twenty-six on record.[†] Twenty-two of these cases died without the diagnosis being made. In two an operation was performed and the diagnosis made at the time that the abdomen was opened. A cure resulted in one (Moynihan). In another, diagnosis was accurate, operation performed, but patient subsequently died from the disease (Lowson). In still another (see author's report below) diagnosis was made, but the condition of the patient prevented surgical interference.

The purpose of this paper is to give in condensed form an epitome of the literature on the subject, to stimulate a fuller record of cases which may occur from time to time, and to urge a more general recognition of the possibility of this disease being present in daily practice, where the symptoms apparently point to a far more common disease.

The following is now reported for the first time: July 23, 1899, I was called in consultation with Dr. Charles A. Ellis, of Sherman, N. Y. The patient was fifty-four years of age, a bachelor, merchant by occupation and a native of New York State. His family history was negative, with the exception that his father died of pyloric cancer. His previous personal history was good, except for a mild attack of appendicitis thirteen months before, which lasted seven days, and recovery was apparently complete. From that time he seemed to be in good health, except occasionally experiencing slight tenderness in the right iliac fossa. He considered himself moderate in the use of both spirits and tobacco and was able to live the normal life of an active business man until the onset of the present illness.

When his physician was first called on June 20, the patient seemed to be suffering from an acute attack of gastritis. It came on suddenly, beginning with severe vomiting and intense abdominal pain, following immediately upon the ingestion of a glass of ginger ale. Some hours after the commencement of the symptoms pain was still marked over the region of the stomach; there was tenderness on palpation, with considerable muscular rigidity over the ascending colon and the right half of the transverse colon. The rigidity was more marked above the level of the umbilicus than below, and the severe symptoms seemed to be more localized in the epigastric and right hypochrondriac regions. Considerable abdominal distention from intestinal gas was present. Temperature normal, pulse 84, not very strong; respiration only slightly increased in rapidity and lessened in depth. Vomiting of watery fluid, at times of yellow color, and of everything taken, occurred occasionally for two days. With a diet of milk, the use of bismuth, and the employment of digestives, all symptoms gradually disappeared. At the end of six days from the onset the patient was able to walk about, seemingly well, although somewhat weak, and on this day made a short visit to his store. When he returned home three small oranges were eaten at one sitting; a few hours later vomiting began, which was frequently repeated during twenty-four hours. There was none of the very severe pain of the first attack, but epigastric discomfort and some abdominal rigidity. For two weeks rectal alimentation was employed, the stomach having perfect rest. On the fifteenth day food in small quantities was administered, and was retained by the stomach. By July 7, fluid and soft diet, with the use of liquid peptonoids, were being constantly employed, yet the patient's strength seemed to diminish and emaciation progressed.

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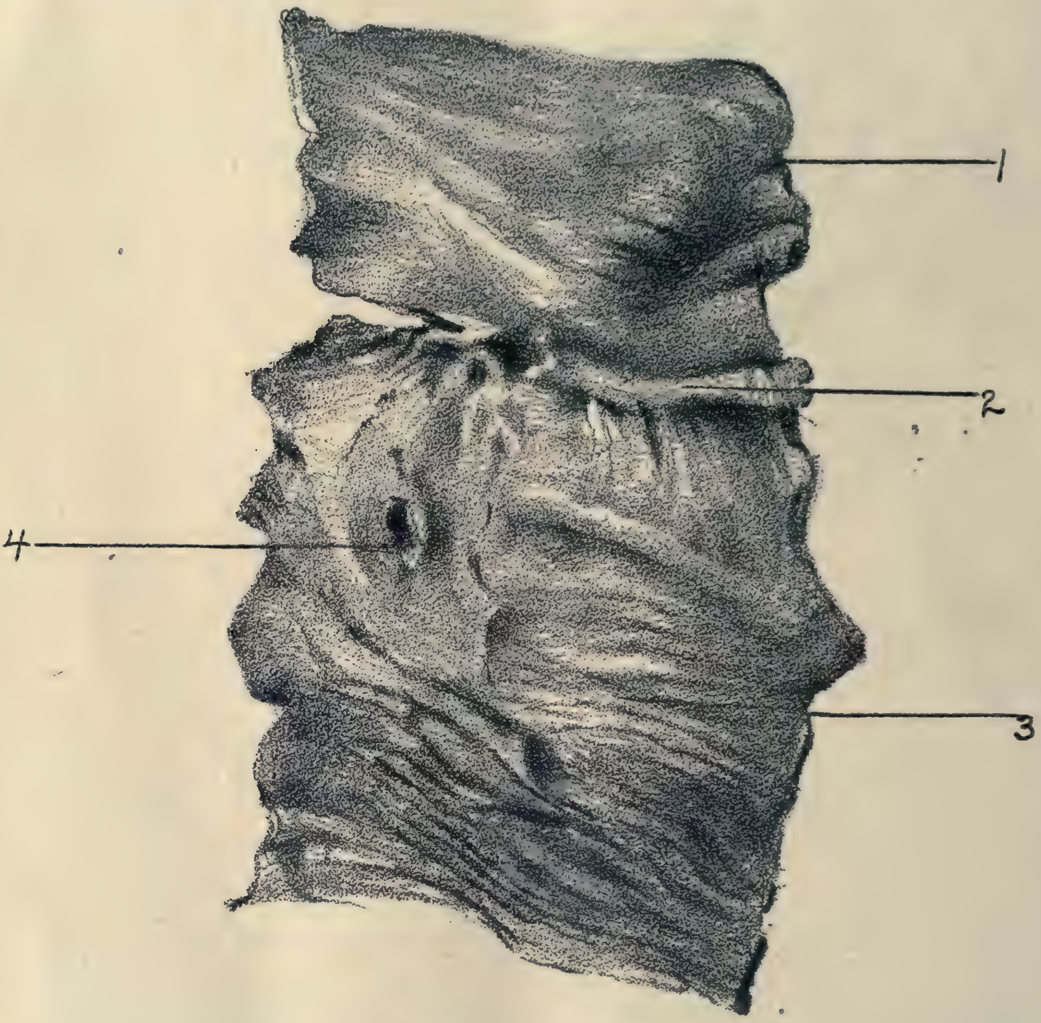
[*] Read in part at the Ninety-seventh Annual Meeting of the Medical Society of the State of New York, held at Albany, N. Y., January 28, 1903; and in full before the Surgical Section of the New York Academy of Medicine, February 9, 1903.

[†] In the discussion of this paper at Albany, Elsner of Syracuse reported a case of a male, aged forty-two, with a previous history of duodenal ulcer, where he had diagnosed perforative ulcer of the duodenum with abscess. The patient's condition prevented operation. On autopsy a large subphrenic abscess was found communicating with the second portion of the duodenum.

On July 23, I found the patient markedly emaciated, somewhat cachetic, and the skin and conjunctivæ slightly icteric, temperature normal, pulse weak. The bowels, early in the attack constipated, were now loose. There was some tenderness and slight resistance in the region of the pylorus and the hepatic flexure of the colon. The liver was large and tender, its lower margin extending about three fingers below the free border of the ribs. Some resistance and pain on pressure over the appendix was manifest, and a small mass in this region could be apparently felt. The diagnosis was made either of cancer in the neighborhood of the pylorus, possibly involving the liver, or more probably of perforating duodenal ulcer, with secondary abscess formation. The appendicitis was considered an old lesion with some acute congestion. The condition of the patient at the time precluded the possibility of any operative interference. Accordingly, it was decided to make every effort to secure temporary improvement, with the hope that an exploratory operation might be undertaken. There was no difficulty in regulating the bowels, and apparently none in having a sufficient amount of food retained, but steady emaciation and loss of strength, with increased cachexia, continued. For a few days, by forced rectal feeding and with the use of predigested foods by mouth, a slight gain was made. But this was insufficient; again he gradually began to lose ground and died of exhaustion the last of August, the eleventh week from the onset of the symptoms. Only twice was there any temperature, and that followed a slight chill,



1. Stomach. 2. Pylorus. 3. Duodenum. 4. Ulcer.

the second and sixth week of the illness. At times his temperature was subnormal.

On autopsy, performed within a few hours after death, I found the following conditions: Many adhesions about the pylorus and duodenum, as well as between stomach and posterior abdominal wall; a small ulcer in the duodenum, one-quarter of an inch in diameter, with its edges everted.

The ulcer, as shown in the photograph, which was taken from an exact drawing of the specimen, was on the posterior wall an inch and a quarter from the pyloric valve. It communicated by a small opening with an irregular sac filled with almost a quart of greenish fetid pus. The abscess cavity was irregular and completely shut off from the general peritoneal cavity. It had involved the head of the pancreas, extending behind the stomach to the left, working downward underneath the transverse mesocolon, and dissecting between the folds of the base of the mesentery. At the attachment of the mesentery, entirely extraperitoneal, was at least a cupful of greenish pus. This communicated with the rest of the pus sac through a narrow channel, the walls of which were covered with necrotic tissue. A small arm of the abscess passed downward, external to the psoas muscle and posterior to the colon. This extended almost into the right iliac fossa, although the appendicular trouble was entirely shut off and independent. The appendix was enlarged, turned upon itself and bound down by many adhesions. A small amount of turbid serum with fecal odor was seen between some of the adhesions. There was also recent general acute peritonitis, apparently of only a few hours standing. The liver was large and the kidneys showed considerable parenchymatous nephritis.

A study of the literature on this subject reveals the fact that there are only about eleven cases reported sufficiently to be of scientific value in a comparative study of this disease, and in some of these important data have been omitted.

Case I.—(Reported by Bouchard.) Male, aged thirty-seven years. Previous personal history was digestive disturbance for a month; noticed a few hours after eating. Onset of attack was sudden, sharp, severe pain in epigastrium; nausea and vomiting of food and bile. The signs and symptoms were vomiting, obstipation, continued severe pain in epigastrium and right hypochrondrium, inability to obtain easy posture; swollen abdomen. After a few days icterus developed. Temperature, slight until late in the disease, then high.

Diagnosis.—Inflammation of gall passage. Pleurisy with effusion later, when higher temperature appeared. Patient was in hospital, but no treatment was mentioned. The course of disease showed impovement. Left hospital. Returned in two weeks very weak and much emaciated. Died day after readmission. From onset of first severe symptoms to death about three weeks.

Autopsy.—Fresh general peritonitis; intestinal adhesions; beneath diaphragm a large empty pus cavity; perforation of the duodenum one and a quarter inches in diameter near the pylorus.

Case II.—(Reported by Chauffard.) Male, aged thirty-three years; uncertain previous personal history of digestive disorders. Two days before admission to hospital there was sudden pain in right hypochondrium. Obstipation. General weakness. Swollen abdomen. No vomiting for two days. Icterus and temperature were not mentioned.

Diagnosis.—Perforative peritonitis. Purgatives were given without effect for two days. The course of disease ran for two days after admission, then sudden emesis with purgation. Death followed immediately.

Autopsy.—Intestines were distended with gas; many firm adhesions; large subphrenic abscess, connecting with the duodenum by a perforation one inch from the pylorus.

Case III.—(Reported by Pfuhl.) Female, twenty-three years; previous personal history was general weakness one month, slight chills and fever, pain in epigastrium and right hypochondrium; anorexia. The onset of attack was sudden, sharp, shooting pain in right side of thorax, behind, increased by breathing. The right hypochondrium was slightly enlarged and painful on palpation. Several severe chills. Icterus not mentioned. Temperature at onset was 101.3° F., gradually increased to 104° F.

Diagnosis.—Right pleurisy with effusion; several days later, right pneumothorax with characteristic signs. The treatment was puncture in fifth interspace. Thick pus containing fat crystals. The course of disease was short. So much pus evacuated that heart moved back into place and patient died in ten minutes from time of puncture.

Autopsy.—Omentum adherent to abdominal wall and posterior to it a large pus cavity. Also a subphrenic abscess size of a child's head.

Case IV.—(Reported by Pusinelli.) Male, aged thirty-three years. Previous personal history not mentioned. Fell from a height of five feet; abdomen injured; for two days kept at work; pain developed; vomited bile-stained masses after meals; went to bed. The signs and symptoms were swelling in right hypochondrium; painful vomiting, continued after eating; loss of weight; signs of right pneumothorax. Icterus present. Temperature 101° F. Neither diagnosis nor treatment were given. On the third day air was detected in swelling of right hypochondrium; fifth day vomited dark gray masses, not lung tissue; died on tenth day.

Autopsy.—Diaphragm pushed up to level of third rib on right side, adherent to base of lung. Subphrenic abscess cavity filled with air. Narrow channel connected this with second abscess the size of an apple, which opened into duodenum just at the pyloric orifice.

Case V.—(Reported by Nowak.) Female, aged forty-five years; past two years slight nausea and occasional vomiting. The onset of attack was sudden, sharp pain in right side and dyspnea. The signs and symptoms were cough, pain in right axilla, emaciation, heart slightly displaced to left and signs of right lung compression, abdomen tender, liver dulness to three fingers below free border of ribs. Neither icterus nor temperature were mentioned. Diagnosis not given. Treatment was exploratory puncture between seventh and eighth ribs on right side, and proved negative. Ten to twelve days after onset patient vomited and coughed up large quantities of foul pus; thereafter for the next four months, small quantities of pus came away. Five days after puncture fat crystals were found in sputum. Diarrhea set in, stools containing mucus and small blood clots. One month later collapse and death.

Autopsy.—Old cholelithiasis; large right subphrenic abscess; perforation of duodenum near pylorus; perforation of a gastric ulcer; recent dysentery.

Case VI.—(Reported by Perry and Shaw.) Female, aged forty-eight years; no previous personal history. While eating, violent cramp-like pain in epigastrium. Diarrhea at end of a week which continued. Kept on left side or back. Pain in any other position. Liver large. Indefinite tumor near umbilicus. No icterus was mentioned. Temperature was normal. Neither diagnosis nor treatment were mentioned. The course of the disease was continued diarrhea, emaciation, weakness. One month after attack she passed six ounces of blood in stool for three days, then died.

Autopsy.—Abscess between enlarged liver, anterior abdominal wall and intestines communicating with transverse colon by a small recent perforation and with the duodenum on its posterior wall by a large circular perforation with smooth edges. Large chronic gastric ulcers.

Case VII.—(Reported by Lennander.) Female, aged fifty-four years; was well until five years ago, dyspeptic; habitual constipation. One year before onset bloody stool with nausea and vomiting. Onset of attack sudden severe pain in abdomen; marked resistance felt in epigastrium. No signs or symptoms were stated. Nothing said about icterus. Neither temperature nor diagnosis mentioned. Treatment, two weeks after onset by an incision through the right rectus, a number of small abscesses opened. Perforation found deeper, supposed to be in pylorus, as gas and stomach contents were seen issuing from it. Sutured. Eight gall-stones removed. The course of the disease was not given.

Autopsy.—Sutured perforation in duodenum to right of pylorus on anterior aspect; another found on posterior wall.

Case VIII.—(Reported by Fenwick.) Male, aged nineteen years. Previous personal history showed heavy drinker. Vomiting began two days before accident. Falling twelve feet on to abdomen was the cause of the onset of attack. Vomited everything taken. Pain in right inguinal region. Symptoms of shock; constipation; fulness in right inguinal region; typhoid condition set in. Icterus not mentioned. Temperature on admission was 100.4° F. Diagnosis not mentioned. Treatment, after readmission, laparotomy; large amount of pus from right groin evacuated; later, incision allowed much fecal matter to escape. The course of disease was that patient gradually improved from typhoid condition and left hospital one month later; readmitted in five weeks much emaciated; found fluctuating mass in right groin; bowels moved freely. Three or four months after second operation diarrhea set in and in another month death followed from exhaustion.

Autopsy.—Body greatly emaciated; abscess channel from Poupart's ligament to under surface of liver communicating with perforation; ulcer duodenum one-half inch in diameter 5½ inches from stomach.

Case IX.—(Reported by Pegram.) Male, aged fifty-six years; ten years ago had stomach trouble; well since then. After hearty meal general dull pain in abdomen. Next day pain increased markedly. Localized in right hyphochondrium. Signs and symptoms were constipation; frequent emesis; abdomen flat, rigid, very tender. Icterus not noted. Neither temperature nor diagnosis mentioned. Treatment was laparotomy. Perforating ulcer anterior wall of duodenum near pylorus with subphrenic abscess. Pus evacuated. Ulcer walled off with gauze. Thirty-six hours after operation patient died.

Autopsy.—Ulcer and abscess as above; also scar of healed ulcer posterior surface of duodenum. General peritonitis.

Case X.—(Reported by Lowson.) Female, aged fifteen years; one month before onset pain in left side; two weeks later chills, depression and cyanosis about lips and nose. Profound collapse came on a few days later with severe pain to left of umbilicus. Abdomen distended; breathing shallow and frequent. Below liver, to the right of median line, was a painful swelling of considerable size. Next day swelling disappeared after patient had vomited a large quantity of foul-smelling matter. Icterus not mentioned. Increased temperature. Diagnosis was perforative duodenal ulcer. Laparotomy was performed; gas and pus evacuated from a subhepatic abscess connecting with a perforation of the duodenum. Suture of perforation and drainage of abscess. Three days after collapse vomited bile, which continued for five days; temperature increased; pulse rapid and feeble; abdomen distended.

Autopsy.—There is no information concerning the after-history of this case; autopsy is not mentioned, but the deficiency of the article makes it almost certain that death occurred within a few days after the operation.

Case XI.—(Reported by Moynihan.) Female, aged twenty-nine years. Previous personal history is several attacks of pain and vomiting, during last five years. Blood at times appeared in the vomitus; sense of discomfort one to five hours after meals. With one attack light temperature, emesis, tenderness in right hypochondrium and severe pain to right of umbilicus. Signs and symptoms were not mentioned, neither was icterus. Temperature 104° F. Diagnosis was made during operation. Laparotomy on eighth day; adhesion about duodenum, gall-bladder and pylorus; abscess between duodenum and liver; duodenal wall thickened with perforating ulcer at juncture of first and second portions. Tube and gauze drainage. Recovery within one month.

Case XII.—(Reported by Bainbridge.) See full report as given above.

Anatomy.—The duodenum is practically a fixed organ, and, while apparently safe, because of its close relation to the spine and right kidney, is really in greater danger than other organs more superficially placed.

The site of the ulcer, in relation to the peritoneal covering of the duodenum, determines largely the subsequent history of the case. The first portion of the duodenum is usually about two inches long, and the peritoneum, except for a small extent of its posterior surface where the neck of the gall-bladder is in close relation, entirely encircles it. The second or descending part is from three to four inches long and covered only on its anterior aspect by peritoneum. This anterior surface is divided into supra- and infracolic portions by the passage from side to side of the transverse mesocolon. Thus, when the perforation is in the first part of the duodenum the chances are largely in favor of its causing general peritonitis. When the ulcer perforates through the supracolic surface of the descending portion the intestinal contents will be discharged onto the upper surface of the mesocolon. It may then follow down the ascending colon toward the right iliac fossa, not infecting the general peritoneal cavity, being walled off for some time by newly formed adhesions. Murphy and Neff have given this as a reason why perforative appendicitis is so often simulated. Perforation of the posterior wall, wherever uncovered by peritoneum, will give retroperitoneal abscess. Maydl states that he has never found perforations leading to subphrenic abscess more than three centimeters from the pylorus. Laspeyres gives the anterior wall of the upper horizontal portion as the most common site for perforation. Oppenheimer has collected data concerning five cases where the pancreas was involved. The perforation, when it involves the general peritoneum, is usually acute, but there have been a few instances where the process was more gradual and adhesions shut off a localized purulent peritonitis.

Symptoms.—Little can be added to what has been given above. The most frequent symptoms are vomiting, pain, tenderness and resistance in the epigastric and right hypochondriac regions, constipation or obstipation, sudden onset and shock. Many patients cannot lie on the right side, such a position causing more pain. Usually there is a previous history of gastric or intestinal disturbances. A number of cases have followed a direct injury to the abdomen or some severe physical strain.

Melena or hematemesis are not common. They occur more frequently in ulcer than in abscess. Laspeyres says "thirty-three per cent. of duodenal perforations bleed and are very often fatal." Oppenheimer cites twenty-four such cases.

Temperature, as a rule, if present at all, is slight. Complications may develop and give rise to fever.

Complications which are mentioned as having occurred.—General peritonitis, dry pleurisy and pleurisy with effusion, empyema, pneumothorax, pyopneumothorax, cholecystitis, cholelithiasis, ulcer or perforation of the stomach, infarction of various parts of the body, such as lung and duodenum, pancreatitis, perforation of the diaphragm and lung.

Diagnosis.—Found more frequently in the male than in the female. Fenwick's proportion, as given for ulcer, of ten to one, is too high. Of the twenty-seven cases of abscess recorded, including Elsner's, sixteen are males, ten females and one the sex not stated.

Occurs in young or old. Brooks reports a girl of twelve years, Pegram a man of fifty-six, Perry and Shaw a woman of sixty.

The following must be specially thought of in connection with this disease—empyema, pleurisy with effusion, cancer of pylorus or liver, pyopneumothorax, hydatid cyst, hepatic abscess, intestinal obstruction, disease of the gall-bladder or its ducts, and appendicitis. Of all the conditions which periduodenal abscess simulates, next to general peritonitis, appendicitis is the most frequent. Mackenzie says he has "not met with an appendicitis case giving rise to general peritonitis, where there was a history of repeated attacks of pain, but duodenal ulcer does give these attacks."

Blood examination for leucocytosis may be of assistance when cancer or some other non-purulent condition is to be excluded. The diagnosis is always difficult. If symptoms have indicated the presence of ulcer (pain in stomach two to six hours after eating, point of tenderness to the right of the twelfth dorsal vertebra, vomiting specially hematemesis), and if sudden severe pain, marked increase of vomiting, or collapse appears, operation is imperative.

Exploratory laparotomy should be resorted to when abscess is probably present.

For those who may desire to review the literature on this subject further than the limits of this paper will allow, a complete bibliography is appended.

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MOSQUITO EXTERMINATION IN NEW YORK CITY.

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BEFORE deciding on the means to be followed to get rid of mosquitoes in any locality, I believe it is a wise plan to give a good deal of attention to the particular kinds of mosquitoes to be dealt with and the circumstances under which they occur. In some places where this precaution has not been taken, extensive work has been done against mosquitoes which later investigation showed gave little trouble, while the insects which were the true offenders were overlooked.

To avoid the possibility of mistake, I advocate a careful observation of the times and places where the mosquitoes occur and the collection and identification of many specimens. From these facts a correct knowledge can be had of the location and kinds of breeding places which need to be destroyed.

In New York City there are several types of mosquitoes which, in my view, it is desirable to consider separately. One of these is the sordid mosquito, *Culex pungens*, the mosquito which is most apt to give trouble indoors at night. Another is the *Anopheles maculipennis* which has been found to be an agent by which malaria is carried from person to person. A third is the *Culex sollicitans*, more commonly known as the salt marsh mosquito. This insect bites by day and night, but is most commonly troublesome in the open air on calm days near the tide meadows.

It is a common belief among New Yorkers that such mosquitoes as occur on Manhattan Island come from New Jersey, the extensive breeding [illegible] on the Hackensack meadows, and the nearness of that celebrated region making this supposition seem probable.

To test the matter, several hundred mosquitoes were caught last summer along the western water front, and elsewhere in Manhattan, and their species determined. It was known that the characteristic Jersey mosquito was the *Culex sollicitans*, and as the conditions on Manhattan Island for the breeding of these mosquitoes were not favorable, it was thought that if the *sollicitans* were present in large proportion, some color would be given to the theory that they came from across the river. When the examinations were finished, it was found that the mosquitoes caught were almost exclusively of the species *Culex pungens*.

It is well known that *Culex pungens* is not a salt marsh mosquito, but one whose larvæ often develop in stagnant water near habitations. A consideration of this fact led to a search for breeding places in Manhattan. The result was that the larvæ of *Culex pungens* were found in nearly all parts of the island. Wherever a trench or the foundations for a building were being made, or, in fact, pools of stagnant water from any cause existed, the eggs, larvæ and pupæ of the sordid mosquito were pretty certain to be discovered. In some cases other larvæ, notably those of the malaria mosquito, were found in the same water with *pungens*.

Stagnant Water and Sunken Lots in Upper Manhattan. The company advertising is said to own one thousand lots of this type.

As might be expected, the excavations for the underground rapid transit railway afford ideal conditions for the propagation of *Culex pungens*. For many miles through the heart of the city, at the bottom of this trench, there are pools that are sheltered from wind and light. The number of mosquitoes which breed in these pools is incalculable. Probably hundreds of thousands are hatched out every warm day.

It would be profitable to know what becomes of the great number of mosquitoes hatched in New York in the summer time. In view of the extent and rapidity with which they multiply, it may seem curious that a plague of the insects has not visited the city. A partial explanation perhaps is, that most of the mosquitoes which come from the stagnant water in the built-up portions of the city do not find the conditions in the neighborhood favorable to their continued existence, and so perish at an early stage of their career. It is also probable that a large part of the larvæ fail to become strong-winged insects. Of those able-bodied mosquitoes which do emerge from the water, a considerable proportion are males, and as these do not bite human beings, they are not noticed. Those which remain are comparatively few.

The sordid mosquito is seldom observed in New York in the daytime, but at twilight it emerges from its hiding place. If an entrance to a dwelling cannot immediately be effected it flies upward, searching diligently along the sides of the houses for an opening. I have observed *Culex pungens* in considerable numbers night after night, beating upon the screens of windows at a height of over a hundred feet from the ground. Failing to get in they would disappear over the top of the house. Their fate beyond this point is beyond conjecture. I have never seen them fly downward.

Stagnant Water in Jerome Park Reservoir. Borough of Bronx.

The breeding places of the sordid mosquito in New York are by no means confined to the built-up portions of Manhattan, but occur with equal frequency in the rural districts of the city. Few people have any idea how extensive these rural districts are. New York, as a whole, is not a crowded city; only 1,000 acres have a population of 250 persons or more to the acre. The average population per acre in Manhattan, as shown by the last U. S. Census, is 147.1 and the average for the whole city is less than 17. There are large stretches of country which have none of the attributes of city or even village life. Adding up some of these tracts, and comparing them with the total area of the city, we find that about 80 per cent. of the territory of New York has a population of less than 20 people to the acre and that there are 93,000 acres which have a smaller average population per acre than 1.6. New York is, in fact, a collection of communities. The group includes two great cities, several small cities, a large number of towns and villages and an extensive area of strictly rural country. Throughout this large territory mosquitoes are more or less of a nuisance.

Imperfect Drainage on a Railway. Malaria Mosquitoes found here. New York Central Railroad, near 148th Street and Hudson River.

Excluding water due to engineering works and natural pools and swamps, most of the breeding places of *Culex pungens* are due to a want of proper order and neatness about dwellings. As its name implies the sordid mosquito is not fastidious about its breeding places. Rain water in discarded buckets, butter tubs, cement or flour barrels, paint pots, broken dishes or boxes serve the insects well. The water in which the larvæ occur is often as foul as can be imagined. The presence of garbage, manure and human feces actually seems to favor their growth.

On the Hudson. Pool produced in constructing the railroad.

The larvæ of the sordid mosquito have been met with in New York as early as May and as late as the middle of November. The winged insects evidently live all winter in some houses. On Jan. 15 last, I caught two adult females on the wing in the corridor of a large hotel near Central Park.

From the standpoint of health, the most objectionable breeding places are neither those found in the densely populated nor wholly urban localities, but in the vicinity of thinly settled districts which are passing from country to city. Here the malaria mosquito occurs; in most of these regions the drainage of the land is unsatisfactory; sanitary matters are neglected. Poor people are attracted to such places because living is cheap. Under such circumstances it is not strange that malaria should be prevalent.

The construction of public works is a prolific cause of malarial and household mosquitoes in New York. At the edges of the built-up sections of the city new grades are constantly being established and streets, with their sewerage, water and gas systems are being built. The building lots adjoining the new streets are left, in many instances, at a much lower grade than the surrounding highways. In these low places, locally termed "sunken lots," water accumulates in pools, and in the pools mosquitoes multiply.

Imperfect drainage due to highway construction, Concord, Staten Island.

In the course of time, as the value of the land increases, the sunken lots are filled and built upon and the stagnant pools eliminated, but meanwhile they are a source of annoyance and illness.

The railways which enter New York add to the prevalence of mosquitoes of the *Anopheles* and *Culex pungens* kinds by affording breeding places on their rights of way and by interfering with the drainage of contiguous property. It is the ultimate destiny of most railroads in New York to run in subways or open cuts with masonry walls at the sides and roofs or bridges overhead. Drainage will be provided for by deep underground conduits, and no water will stand on the right of way even in rainy weather. There are several miles of this kind of railway already built in the Borough of the Bronx and an excellent section in Manhattan. The work is expensive, and the progress being made in converting old lines into this new form of construction is slow.

In the more remote suburban districts conditions are often favorable to the *Anopheles maculipennis* and malaria is common. Apparently malaria mosquitoes have a preference for places which are protected from the wind, like hollows, cloves and glens, and it is among the residents of settlements in such situations that malaria is most likely to occur. The larvæ of *Anopheles* has been found in the shallow water of woodland marshes, fresh-water ponds and swamps, spring lands and sluggish brooks. In the partly built-up sections of the city the larvæ of malaria mosquitoes have frequently been met with in water in excavations, beside railroads and highways, in lakes, artificial streams, and in discarded receptacles such as butter tubs, boxes and barrels.

Beside the mosquitoes referred to, there is the third kind which causes a great deal of annoyance in some localities. This is the *Culex sollicitans.* This insect, most often called the salt water mosquito, occurs almost exclusively in those portions of New York which lie near the tide meadows. There are about 40 square miles of meadows in the city. About 150,000 acres of land are visited by the *Culex sollicitans* in great numbers. The number of people affected is considerable, for although there is an average of only 1.8 persons per acre in the regions most seriously concerned, there are numerous seaside parks and residence settlements near the edges of the salt marshes where the inhabitants and visitors are frequently annoyed by mosquitoes.

As is now well known, the salt-marsh mosquitoes breed for the most part in the stagnant pools of brackish water which lie within a few hundred feet of the uplands at the edges of the tide meadows. These pools receive rain—and occasionally some surface water, and are overflowed at unusually high tides. As a rule they have no outlets.

It is remarkable to observe to what extent tall grass acts as a shelter for salt marsh mosquitoes, as indeed do trees, thickets, hedges and shrubbery. The lower and thicker the vegetation, the better the protection. The dense woods, thickets and shrubbery so often seen along roadsides and close to dwellings, keep enormous supplies of mosquitoes constantly at hand.

If the people of New York seriously want to get rid of their mosquitoes, there are many circumstances to favor them. Not the least of these lies in the fact that the Board of Health has taken an interest in mosquito extermination as a step toward the prevention of malaria. In the summer of 1901 resolutions were passed by the Board to the effect that all institutions and the physicians of the city be requested to furnish the Board with information in regard to patients suffering from malarial fever under their care, and that circulars on the cause and prevention of malaria be mailed to the addresses at which malarial infection had apparently been contracted. In the summer of 1902 experiments were undertaken into methods of destroying larvæ, and extensive biological and sanitary surveys were made to determine the kinds, location, extent and proper remedies for the breeding places. Some steps were taken toward applying legal remedies for unsanitary conditions which favor mosquito propagation. It was announced by the president of the Board of Health in an address delivered before the Civic Club, Feb. 7 last, that this year the work of mosquito extermination would be pushed upon the approach of warm weather.

In setting out to exterminate mosquitoes, the Board of Health has taken up a large work, for the extermination means the elimination of stagnant water, and there is hardly an acre of the 327 square miles of Greater New York which has not some standing water upon it. Nevertheless, ample power is given to the Board to deal with this subject in a comprehensive manner, and by announcing that war is to be waged against all persons who are responsible for stagnant water, a warning has been given that this power is to be used in a vigorous manner.

Considerations of health, no less than of personal convenience, should prompt property holders and others to yield a willing compliance to the purpose of the Board. It will generally be found easier and cheaper to correct the unsanitary conditions voluntarily than to do so after being prodded into action by legal proceedings.

For those who wish to be rid of mosquitoes the first thing to be done is to see that the yards and grounds in the vicinity of their houses are put in good order. Useless receptacles which will hold water should be destroyed; tubs and barrels which have outlived their usefulness should not be cast out upon a rubbish heap, but be broken up for firewood. There should be no rubbish heap. Rain barrels and cisterns, if indispensable, should be stocked with gold fish or covered with mosquito-proof screens. Cesspools and manure pits to which mosquitoes can gain access should have enough kerosene oil thrown into them to keep their surfaces completely covered.

For the elimination of pools of limited extent which occur on private property, no remedy is so suitable as earth filling or drainage. Often a few barrowfuls of earth, taken from a nearby point, will put an end to a focus of mosquitoes for all time. Frequently the opening of an obstructed drain or brook, or the cheap construction of a proper outlet to a pool, will give vent to an accumulation of stagnant water which has been a source of annoyance for a long time. The margins of brooks and ponds should always be sharp and clean and as free as possible from weeds. Green scum and other algal growths indicate conditions which are favorable to malarial mosquitoes. In the correction of pools I do not regard the use of oil as suitable for any but pressing needs. It can afford, at best, only very temporary relief. Its best use is to stop the hatching of mosquitoes in a pool until the latter can be eliminated.

The pools and puddles formed in the course of building operations could be largely avoided if contractors would use care in avoiding the formation of unnecessary accumulations of water. Such a universal neglect of public health and convenience as is to be seen wherever building operations are in progress in New York can only be justified on the supposition that the contractors have not been aware that they were creating nuisances. Proper and simple ways to avoid forming stagnant water in excavations will readily occur to engineers and contractors when once they understand that corrective measures must be applied.

In the built-up sections of the city it would be well if the bottoms of wet excavations were made to slope to a central point or points from which such water as gathered could be drained or pumped to a place of permanent and inoffensive disposal. For pools which it may not be practicable to empty, the use of an insecticide, such as oil or crude lime, would destroy the larvæ. Kerosene, or any light oil, will answer, provided an unbroken film is kept on the surface of the puddle. If lime is used it should be applied frequently and generously and stirred well into the water after being slacked in it. One gallon of crude carbolic acid to 500 gallons of water, is an excellent insecticide.

Bodies of water, such as swamps, streams and ponds are often difficult to handle. If they are to be eliminated they should be treated according to well-considered plans made by experienced engineers in accordance with the requirements of each particular case. Work of this kind will often partake of the nature of a public improvement, and should be looked upon as a necessary step in the development of the city. Such public improvements have been extensively made in the past. A glance at some old and new maps of Manhattan will show that a vast amount of filling, grading and draining must have been done in order to eliminate the large quantity of stagnant water which originally occurred in New York.

Here is an excellent opportunity for other departments of the city to cooperate with the Board of Health in suppressing malaria and mosquitoes. Large areas of the city are now practically valueless for want of drainage that could be made useful and capable of yielding a handsome return in taxes by suitable improvements. For example, it is doubtful if another suburb so naturally attractive, yet seemingly so hopelessly neglected, as Staten Island, exists anywhere. By providing proper drainage for this island the city could convert it into a beautiful and healthful region.

A final word remains to be said about the extermination of *Culex sollicitans.* Were it practicable and feasible of application, the proper remedy for correcting the breeding places of the salt marsh mosquito would be the reclaiming of these lands in a way which would make them suitable for agriculture, building or commercial purposes. There are two ways of reclamation suited to the marshes: First, filling, by which is meant raising the level of the ground with sand and earth; and second, dyking, by which is meant damming out the tide waters with embankments and pumping out the fresh water which collects on the inside. Both methods have been employed in or near New York, but only on a small scale; nothing large has been attempted. The economic conditions which led to the successful reclamation of 680,000 acres of English fens, of 40,000 acres of Haarlem Lake and of great tracts of sodden land in Germany, France and other parts of the world, do not seem to occur here. The experience which has been had in recovering submerged or marsh property in New York seems to indicate that only where land so reclaimed has a market value for building lots, does it pay the owners to improve it. Reclamation for the purposes of building is going on all the time; filling is the invariable process.

One practical and economical measure for reducing the number of mosquitoes *which come* from the meadows, is the destruction of the breeding places by the construction of small ditches. Suitable ditches can often be constructed for as little as 1½ cents per running foot. The ditches are designed simply to give outlet to the water which stands in the shallow pools on the meadows, and are not intended or suitable for draining the water from the saturated soil; this would be practically impossible, owing to the low level of the marshes.

One of the most beneficial steps in securing relief from marsh mosquitoes is the thinning out of foliage about houses, drives and walks. As much should be cut as considerations of sentiment and beauty will permit. If the mosquitoes are especially troublesome by day, the grass should be kept as short as possible and all foliage trimmed to a height of at least ten feet from the ground.

Before concluding, it seems desirable that a word should be said as to the extent to which mosquitoes can be exterminated. The term is not used in a literal sense. No one should think that the complete extinction of the insects is generally contemplated. It is rarely possible to destroy all the mosquitoes in a locality. This, fortunately, is not necessary with most mosquitoes, since the presence of a few is not likely to be objected to on the score of discomfort. A reduction to such a point that those which remain will not be troublesome is what is generally meant by mosquito extermination. When the mosquitoes are of the malaria-bearing type, the case is different; extermination to the utmost practicable extent should be the idea.

SOME PRACTICAL SUGGESTIONS ON MOSQUITO EXTERMINATION IN NEW JERSEY.*

BY HENRY CLAY WEEKS,
OF BAYSIDE, L. I.

THE speaker appreciates the courtesy of an invitation to come over from the States and address you on the subject that so slightly (according to your traditions) affects you as compared, for instance, with the section from whence the speaker comes. Those of that section, however, frankly acknowledge some slight cause of complaint and always have in mind, if not on their lips, the name of a neighboring commonwealth whose pests are fairly chargeable with "pernicious activity."

It is a source of great encouragement that this commonwealth of yours, whose vigorous methods have made its justice stand quite alone in reputation; the varied product of whose soil and mines, its manufactures and its commerce make it a peer among great States; whose rare, natural attractions, as well as its public spirit have drawn a very substantial part of its population from those who naturally belong outside its borders, should be the first to take legislative action against a common enemy. This, indeed, is encouraging and in line with her reputation. It remains to be seen whether this action will be followed up by other necessary action until the State becomes, as it may, freer from these evils than some others which it has combated. There is no better method to accomplish this end than discussion and education, and the introduction of the subject which your worthy body has now for the first time, as is learned, decided upon, *is* to be hoped will be a most potent factor in the educational plan.

Historical Reference.—It was long years after it was announced that by the reclamation of marsh lands for commercial purposes, as in the English fen country over a century ago, mosquitoes had been lessened, before present efforts were made to reclaim marshes simply to reduce the pests.

It is now nearly a century since it was suggested in a London publication that oil might be used to diminish mosquitoes. Probably that was not the earliest suggestion of the idea. It was followed during a half century by many confirmations, but nothing resulted of it all, until a schoolboy in Central New York, interested in natural history, experimented in destroying "wigglers" by using a little oil on the water, but it was not until that same experimenter, about ten years ago, published the results of his later work of destruction on a larger scale, that attention was generally attracted to the idea, coming as it then did from one who represented the knowledge of the government on the subject—Dr. L. O. Howard, of Washington.

The esthetic idea of getting rid of them by the improvement of unsightly situations comes with the new century.

So, in the other phase of the subject, it was a score of years after Dr. A. F. A. King suggested the theory that malaria was borne by mosquitoes, that any systematic efforts were made to exterminate them and thus reduce malaria—the exact experimentation in the meanwhile showing in a most marvelous way the correctness of this suspicion. And the same delay in practical results followed the suspicion that yellow fever was transmitted by mosquitoes. Last year was the first in two centuries that Havana was free from a case of yellow fever, and that, after the destruction of the breeding places of *Stegomya fasciata*—definitely proven to be the source of transmission of that scourge.

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* Read before the Twenty-eighth Annual Meeting of the New Jersey Sanitary Association, October 24 and 25, 1902.

The Anti-Mosquito Habit.—It all simply means, what is true in many other realms, the slow growth of great ideas and improvements. As Thomas B. Reed recently said at the centennial of Bowdoin College, "Not only must wisdom be arrived at, it must be crystallized into habits for the good of all." In this, as in all other cases, the first reformers have been the subjects of much ridicule, and it has taken a store of courage and persistence to make any impression on the public attention. It is a hopeful sign that some papers which were much inclined to be facetious are now seriously interested. An influential journal in mind now, that first alluded to the subject in a trifling way which the speaker rather boldly criticised, after a complete change during the last two years by many serious articles, gives to-day four solid pages to the treatment of this and kindred subjects in an article by your President. And so the battle has been and must be waged in all lines, equally against the learned with the unlearned. And though the cases are rapidly growing less there are still a few weaklings who think the task too great. The campaign must still be pressed until the domestic habits, the commercial habits, the sanitary habits, the engineering habits, will be as much against causing or maintaining breeding places as is sentiment against any habits that would cause any other plague. And this will only come by carefully holding all that has been gained—losing nothing by ill-considered action—and the extension of the area, gradually but surely. It is encouraging that the President of the Board of Health of the great metropolis is doing what he can in this campaign and already has put into the field a number of experts.

One of your speakers—a distinguished worker in the cause—in a letter recently expressed the fear, which has been felt all along—that many will go into schemes of extermination with only the faintest ideas of the necessities of the case, will meet inevitable defeat and thus the good cause will have a strong reaction not to be overcome in many years—all this unless the people are well informed on the subject. Any one who thinks the campaign easy work mistakes the enemy and the situation. The habits of the nation have to be completely changed and then the victory is won and hardly before.

Whereas, for instance, the acts of engineers have often been the cause of great trouble, study will avoid this cause—as in railway and highway construction by not blocking watersheds, in street improvements, by first caring for water before streets are filled in around low places, and thus through all engineering work. An instance is in mind where a railroad was so run across a lake as to form a pool without outlet. This space has been found breeding malaria-bearing *Anopheles* in vast numbers.

In a report on conditions and remedies on the north shore of Long Island, in 1901, the speaker referred to a proposed driving road in a certain section, and even described in detail how it should be constructed to obviate mosquitoes. Since then the road has been constructed and in entire disregard of the suggestion and to-day comes to hand the report for 1902 of the entomologists engaged in that territory which says: "Undoubtedly the worst natural exposure in the whole territory (about 50 square miles) was along the eastern side of the new road to the beach at Lattingtown. Somebody, in building that road, committed an error that is no less than criminal, for the pools formed there, on account of the natural drainage being cut off by the road, bred not only *Culex* but *Anopheles* in almost as great numbers per square foot as was physically possible."

Instances will occur to all of the extension of city streets so as to enclose water in which situation it becomes most excellent breeding grounds. New York City has acres thus conditioned in the Bronx, in Long Island City and elsewhere, with the necessary consequences of discomfort and ill-health. Landscape architects, public officials, farmers, gentlemen owning country seats, physicians—in fact, every one must cultivate the anti-mosquito habit. Educated to believe in their danger and the possibility of their extermination, all must talk of it as well as practise their belief, whether in public or private spheres. The decided change from incredulity or even opposition to strong belief, which will result from this course, was most clearly noted in a certain section where theory and practice have combined in the light of a successful experiment on Long Island, before referred to. And so the work will grow, for nothing exterminates like extermination.

The advance of science has noted some remarkable changes of views—none more so than in regard to the causes of malaria and yellow fever, and this advance, when understood, has greatly strengthened the anti-mosquito habit. The plain practicability of the means used in doing this work appeals to all who are informed. It impressed the speaker many years ago, and enforced rest has afforded an opportunity later of renewing the thought and writing on the subject. And every one who accepts the now indisputable proofs of danger from the pests is called to a like mission of extermination.

Importance of the Work.—The question of exterminating mosquitoes from a section also implies so many other results than simple riddance, that it is not thought to be overstating the case to say that it is one of the most far-reaching economic questions of the day. Foremost comes the increased healthiness of the section—its relief from the most insidious disease, malaria, or from that dreaded scourge, yellow fever. The physical and mental dejection of a malaria-ridden people or the devastation that comes of an invasion of yellow fever is beyond description. It has been too clearly shown that these ills may be avoided by exterminating the mosquito that instances will not be cited before this well-informed body.

Another result comes in the improved conditions resulting from the breadwinners of a malarial section being able to employ all their time at work—instead of suffering the loss of a large proportion of the year by actual illness and the loss of vigorous life. The loss, actual and incidental, to some communities from malaria in one year would accomplish all the relief work that would banish it forever from their midst.

Again we have the physical improvement of the land reclaimed through exterminating operations, and this now worse than useless land throughout the country amounts to an almost incredible area. Shaler estimates the salt area of the United States to be over 12,000,000 acres, and the lacustrine swamps, not including boggy lands, to be about 25,000,000 acres. To turn this vast area from pestiferous conditions to productive conditions means the addition of many billions of wealth to the country. The resultant effect on neighboring values adds another equally large element of importance to extermination by reclamation.

And what has been more recently acknowledged as an important consideration, namely, public comfort, also applies with great force in this movement. Though some varieties of the enemy may not actually cause disease, the discomfort they all cause is beyond estimate. And then comes what is important in its way—the esthetic results—the improvement of foul breeding places, often right within the line of residence areas. Population and values increase with attractive and healthy surroundings and in every aspect imaginable there is a general betterment. It is doubted whether more than two other economic reforms of the country can show an array of material and other advantages equal to this.

If one is a benefactor who makes two blades of grass grow where before but one grew—another is equally so who causes no mosquitoes where formerly millions grew. And anyone who does this needs no greater monument than the gratitude of a once-suffering but relieved people. It is to be hoped that your excellent society may earn such a monument through its present action in opening this discussion.

The speaker some months ago gave, in the *Scientific American*, a statement of some of his conclusions concerning the mosquito plague which he now ventures to repeat as giving briefly his earnest views:

1. Every mosquito found in a district is an indictment against the public spirit, the progressiveness, the intelligence, or the persistence of the people of the district, except in instances so rare as not to affect the statement.

2. Every case of malaria, not a relapse or an importation into a district, is evidence of avoidable crime against humanity in some or all of its interests, and against the fair fame of some of the most beautiful sections of the land.

3. That in greater degree than smallpox is malaria a crime for the latter reaches more persons and its effects are more persuasive. Some high authorities are urging the imprisonment of smallpox patients as criminals.

And when these ideas are fully realized and acted upon your State will begin a new era of development. On the other hand it is the sincere belief of the speaker that if this State allows other sections to get in advance of her along the fighting line, her population and standing as a place of residence will be seriously affected.

There is a movement—largely educational so far, it is true, but still having a successful practical side—going on along the hilly north shore of Long Island which is attracting great attention and bids fair, if continued along suggested lines to lead to a great increase in population and the movement of this new population must affect other sections adjacent to the metropolis. Probably no point will be affected more than near sections of your State. The future of Long Island has so impressed the greatest railroad management of the world, that it is spending many millions of money in making it convenient by tunnels, etc., for New Yorkers to make that island their home. And it will not be but a short time before New Yorkers doing business in the metropolis and living in your State, will be able to drop themselves and their household goods down into a tunnel on the Jersey side and have all shot through to Long Island most conveniently. And this will most surely be the result unless you can say, as Long Island hopes to say before long, "No mosquitoes; no malaria." A recent convert—a man of large affairs—lately said that he believed both of these troubles would be extinct on Long Island in ten years—to which the speaker responded, "It can be so." If your State presses the battle she will hold her own, but not otherwise.

Chances of Final Success in New Jersey.—The question naturally arises, Can the mosquito be exterminated from a whole State? The confident answer is "yes," if the fight is well-planned and pressed. The simple extension of the successful work carried on over a limited area will accomplish precisely the same results. The State is densely enough populated to demand that all breeding places be obliterated and that means success for the whole State.

It also requires, as before stated, an education of the public and a willingness to spend a large amount of money—no, not large when results are measured, indeed, an amount only that would be returned to the State within three years of the proclamation of liberty. Firm but fair legislation must be planned to aid in the movement or it will be seriously retarded by those who are incredulous, careless or contrary.

Long-held theories of night air, of miasma, of air from fresh excavations and all that long list are being fast exploded—though such creations are generally long-lived. This rapid change of view as to the true cause of malaria will greatly help you. And though your legislators will be facetious, as at the last session, nevertheless they will grant the necessary funds if the cause is rightly put and the money appropriated shows results. Your arguments to reclaim all the breeding places is greatly strengthened by the fact that no part of your State is beyond easy access to large centers of population, so that every acre reclaimed could be profitably utilized for residential or agricultural purposes.

For many years the speaker has regularly read what has so strongly been set forth by your most efficient State geologists and their coadjutors on the subject of drainage and reclamation. The theme has been more interesting than any romance and why all the successive yearly presentations have not had more effect is a cause of great wonder. Of course many of the reports were made before the compelling argument of healthfulness had attained, as now, its strongest force. The State now must listen to those who officially present this matter. Its wastes, salt and fresh, must be redeemed, not only because to do so is profitable and attractive, but preeminently because the greatest boom to a community—good health—demands it. For forty years your State geologists have urged action toward reclamation and the visits abroad of Professors Cook and Smock, resulted in arguments that should have produced great benefits to the State. After Professor Cook's visit to Europe he closes his report on this subject thirty-two years ago, thus: "Mosquitoes and green-headed flies, those pests of our salt marshes, would certainly find a less favorable breeding ground if the water was all drained from the surface and this of itself would be a great saving to the community. I saw a few gnats (English for mosquitoes. W.) in the English fens, none in Holland. . . . Such lands are by far the most profitable and productive of any I have seen abroad."

And yet, looking at New Jersey's problems as compared with those of the countries visited by him—England and Holland—the task is a simple one to redeem its wastes and exterminate its mosquitoes. For instance, you have no situation where it will ever be required to reclaim and cultivate valuable land twenty feet below sea level as in some cases in Holland.

In 1892, before the cause of malaria was known, Professor Smock said: "Looking to the ultimate development of all our natural resources, and the removal of the unsightly and malaria-breeding wastes . . . the need of some carefully planned and judiciously executed drainage projects on our tidal meadow lands is of great importance and is much to be desired.

The Fresh Water Swamp Problem.—By its geological formation New Jersey offers a somewhat difficult problem in the reclamation of some of its interior swamps, and these must be reclaimed to solve the mosquito question. For instance, with quite parallel ranges of mountains in the northern part, there have been formed water surfaces between and beyond them with scarcely enough opportunity of outlet to relieve the situation. And this difficulty has in some cases been increased by the works of man. It will readily be conceded that the water of the Passaic basin forms the greatest menace as fresh breeding areas in the State. Several swamps of thousands of acres here occur and if not already they will slowly, as is usual, but surely become the habitat of *Anopheles* until in their entire vicinities malaria will become endemic.

That "Lake Passaic" existed at one epoch with an area 30 by 10 miles, stretching from east to west from Morristown to the second Watchung mountain, and from south of Millington about to the New York line, seems most certain. At any rate this area now presents a problem in the midst of valuable residence property, as left in this condition at a later epoch—with its difficult outlet and its scattered water surfaces.

The efforts at relief here have been long continued and as yet are only partly successful. The statement is thought to be correct that if even all works planned are carried out relief would not be had for many extensive marshes of the Passaic and its tributaries. A third of a century ago some of these marshes were surveyed and reported upon and yet they still exist. By reason of the long, but slightly descending course of some sections of its bed, large areas are flooded constantly and still more are flooded by freshets so as to render them useless for cultivation and worse than useless as forming breeding ground.

Though there is an elevation of 230 feet above tide at Great Swamp, there is a descent of only about one foot a mile in the Passaic and its tributaries for about 20 miles—in a large part of that distance it being substantially level. In fact from its source to Little Falls the descent is only a fraction over one foot to a mile. To overcome this would seem to be well-nigh impossible, and yet thus to reason is not in the spirit of the age. Some thoughts in this connection must be reserved for fuller consideration and study of data, but so far as considered it is thought that this whole section could be relieved by State action and these vast interior swampy breeding grounds be eliminated and conditions of better health and living prevail, waste lands made cultivatable and even habitable, and a great economic and financial benefits to the State result.

You have a fresh swamp area of vast extent—just what, your geologist could not say—little of which has been redeemed for cultivation. Take, as an example, the Great Swamp with its 5,500 acres of black muck about 5 feet deep, it offers an investment for capital almost beyond the dreams of avarice of any farmer.

In New York State, there was some twenty years ago a situation that will illuminate our dream. A swamp near a village was claimed to be the source of an epidemic of malaria—why, was not then known. At some distance was an abandoned canal, deep enough to drain the swamp. This idea was urged, the State did the work, the swamp was effectively drained and malaria shortly disappeared. The swamp was cleared of growths, put under a state of cultivation for vegetables, particularly onions and celery. It was stated many years ago that this worse than useless land was then paying 10 per cent. net on a valuation of $1,000 per acre. The speaker purposely made inquiries a few days ago as to present income and found that that statement of returns still held true and that $50 an acre only had been the cost of redemption. The tract is now cultivated by several farmers who are making farming pay. Your State has thousands of acres of equal opportunity and but limited cultivation is as yet practised. These lands must be secured against inundation and this must be the work of the State under plans, a discussion of which time-limit excludes. A low estimate of increase in the valuation of these lands would be $100 per acre. Net results of 10 per cent., as has been quoted, would warrant the statement of increase to be $1,000 per acre, but at $100 the State would have an increase of valuation of many millions of dollars.

But these material considerations, as vast as they are, are not urged as, by any means, the greatest result to be accomplished. When it is realized that these great wastes are the congenial habitat of mosquitoes, quite generally of the malaria-breeding *Anopheles,* and when it is realized that the direct and indirect misery and loss caused by this disease are beyond a financial showing, then does the transcendent importance of action become manifest.

The Salt Marsh Problem.—As in the case of the interior swamp problem, we take up a single instance of coast marsh, that which is more familiar to most of us, namely, the Newark and Hackensack meadows. The treatment of one section, however, is not the proper thing for all, for in few realms will the skill of the engineer be more required than in meeting the differing conditions. No part of the salt marsh problem is more intricate than the withstanding of tides. Studied for centuries in Europe, made a government work, untold millions of money expended, there has resulted a fund of information and skill not realized here.

Your geologists estimate that the State has about 300,000 acres of tidal marshes, or one-eighth of its farm land, and further, that considering the extra fertility of these marshes, if reclaimed, that there would be an addition of 20 per cent. or more to your farm products. Of course, subsidence of some of these reclaimed lands has rendered automatic drainage inoperative, but it would seem that in your cases of reclamations, two centuries old, profitable resort could be had to pumping. Some efforts at reclaiming a section of the Newark meadows began about 40 years ago, but were not crowned with final success. Some plans which have been proposed by your Geological Survey for relief of this entire section are most interesting and brilliant. But the conditions to the speaker's mind, demand more authority and means and a still more radical treatment than can be commanded by any private movement. The lack of success noted above and the efforts to induce further reclamation, so far unsuccessful, point to the need of further consideration by the best authorities in the lines involved —engineering, legislation, financiering and what not, and a concentration of effort on what may be decided upon.

The speaker has long had in mind some relief plans which he has not had the opportunity or time to confirm by data, which has not been suggested so far as he has noted. Some such plans would seem to solve the difficulty. Surely advanced thought must find some way of overcoming the great menace to values, to health, to appearances, to all conditions which prevail in this great waste area of 27,000 acres. When it is shown to be advisable, and there is expended $25,000,000 in improving the Nile, when Chicago builds a canal forty miles long, costing $33,000,000, to improve conditions, when the great Pontine marshes are to be reclaimed at vast cost by the Government of Italy; when individual enterprise spends millions in engineering projects, surely a State of the resources of New Jersey ought to carry out—and that speedily—some means of relief for the great problem that is presented in these marshes within the constant view of so large a part of the metropolitan area.

But I may not encroach upon the subject of the speaker who is to follow.

A few days ago the writer stood with the correspondent of the *Brooklyn Eagle* and the *New York Times,* which papers have taken a great interest in this subject, at the edge of what was, two years previously, an impassable salt marsh infested with mosquitoes and presenting an unsightly waste in close proximity to one of the finest estates on Long Island, or even in the country. That day were seen growing as fine celery as one could wish, turnips measuring sixteen to eighteen inches in circumference, a fine field of rye, another of timothy, besides other crops; and in some other parts were seen the great breaker plough, drawn by specially shod horses, turning over in perfect furrows some more of the rich land which as yet had not been mechanically or chemically subdued. This has come about, as it may with your hundreds of thousands of acres of salt marsh, by a firm conviction and the pressure of that conviction against the opposition of nature, of ancient sentiment, and all else. In the case referred to, the owner himself experimented under many discouraging circumstances, had much of his work to do over and over again, laid out a large amount of capital, but under later hands is working out his cherished ideas, and is gaining one of the finest features of his vast enterprise. That day but a single mosquito was found in traversing the entire marsh.

In conclusion, and briefly, Organize! Let every community where mosquitoes and malaria prevail, organize. Much can be attained in this way that is not possible by individual action. The movement on the North Shore of Long Island to which reference was heretofore made, is the result of organization; not organization specifically for mosquito extermination in that case, but that as coming under the beneficent objects of an association of men the peers of any in the land in any respect; men who thought the mosquito problem not too great, nor yet too small for them to attack. Locate all the causes of your troubles—the nesting places of mosquitoes and malaria; let competent experts be kept in the field all summer; determine whether the places located are breeding *Anopheles;* ask all your physicians to report the sections where malaria prevails; note, as did the above-mentioned movement, the exact concurrence of the two evils; candidly inform the people, irrespective of any fear of injuring a section, the fact and the cause of the fact; urge legislation if existing laws do not meet the case; ask State help where the proposition is too large for towns; let eminent domain have full play; appoint committees, organize meetings and lecture courses; lead public sentiment, raise funds. No festering sore is cured by throwing a mantle over it; expose it to the bone, if necessary, and clean it out. Let considerations of humanity, the bettering of the conditions of all classes, especially the poor, who are most affected by these evils; let these bravely prevail. Having located the enemy, attack him with the vigor you would attack any other scourge. Plan methods of relief carefully and carry them out thoroughly. To be less than thorough means defeat and a setback for the principles of the warfare. Whether the action refers to the spraying with oil of a pool a foot square or the drainage of the wet lands of an entire State, let it be done, as it may be done, thoroughly, and victory is as sure as any martial victory ever was. The instances are now too numerous for anyone to question this, and the call is to every one in the State, Enlist! Enlist!!

THE SANITARY ASPECT OF THE MOSQUITO QUESTION.*

BY JOHN B. SMITH, SC.D.,

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NO ONE factor has had a greater influence upon sanitary practice in general, than the discovery that certain insects act as intermediate agents in the transmission of specific diseases of animals and human beings. That flies of several species are active agents in transferring germs of typhoid and other intestinal diseases from contaminated excreta to food substances was proved to demonstration in our camps during the Spanish-American war. This forms one type of disease transmission where the insect serves as a carrier only and the species is, comparatively, immaterial.

Quite a different state of affairs exists when disease is caused by a specific organism that has an intermediate host in which one of its stages is passed. Such a parasite is strictly limited in its cycle and cannot move beyond the path marked out for it: the privilege of infesting two hosts, is paid for by restrictions which may not be transgressed. A number of insects have been found as intermediate hosts for diseases of animals; but for the present only the mosquitoes will be considered.

Positively proved against these insects are yellow fever, filariasis, elephantiasis and certain malarial fevers, all of which depend for their existence upon the presence of certain parasites in the blood or lymph of the individual affected.

For yellow fever the agency of the insect has been proved experimentally only. The parasite causing the disease is not yet known and none of its stages has been actually demonstrated in the mosquito. All that has been written on this point is inference based on observation and is reasoned from what we know of other diseases, chiefly malaria, the parasites of which are known in nearly all their stages. Concerning yellow fever I need say only that one species of mosquito alone, *Stegomyia fasciata,* has been found able to carry it. We do not have this species in New Jersey, so far as my observations extend, but we have an allied form which has been referred to the same genus.

Recognizing the actual method in which yellow fever is carried has completely changed medical and sanitary practice for its control. No longer do we fumigate mail matter, destroy fomites and bar out products of countries where the fever exists. If we fumigate ships, we do it to kill any mosquitoes that it may harbor, and if a patient is at hand, the one guard that is deemed essential is that he should be absolutely protected from mosquitoes. So long as a case is kept so screened that these insects cannot reach it, so long it cannot be a center of infection.

The duty of the health officer in a locality where this disease is endemic is to control the mosquitoes carrying it by destroying their breeding places, and the effect of scientific sanitation has been beautifully illustrated in the results obtained by our Army medical service in the West Indies.

Malarial fevers whether tertian, quartian or estivo-autumnal, are carried by mosquitoes belonging to the genus *Anopheles.* In general literature all the species of the genus have been placed on one level; but as a matter of fact the charge has been proved against one of our species only—the *Anopheles maculipennis* of European writers. Against this species it has been proved to demonstration in

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* This paper was read as an introduction to a series of 50 slides which illustrated all the stages of the mosquitoes referred to and the malarial *Plasmodia* in all forms. Typical breeding places were shown from photographs, as was a ditching machine which had been in use on Massachusetts marshes.

America as well as in Europe. The common species in New Jersey is *Anopheles punctipennis* and I attempted to test the ability of this species to transmit the disease during the current season. Unfortunately cases were scarce and while the mosquito supply was abundant, only two patients were secured. One near Newark, one at New Brunswick. In both instances the results were negative; but the conditions were not such as to make this negative evidence positive. It is a suggestive fact, however, that while *Anopheles punctipennis* is common throughout South Jersey and especially in the pines, malaria is not at all a prevalent disease there; but where I have found *Anopheles maculipennis* at all common, malarial fevers have been more or less abundant.

It might seem that, with cases of malaria occurring in some numbers in a locality, and *Anopheles* even moderately common, malarial fevers should be much more prevalent than they actually are. They are prevalent enough, in all conscience and that they are not more so is due to the conditions imposed upon the spread of the *Plasmodium* causing the disease.

The *Plasmodium malariæ* is an animal; a protozoan, small enough to live and develop in a red blood corpuscle and its life period may be two, three or four days under proper conditions for its development. When fully grown and ripe it bursts, and liberates into the general circulation a great mass of spores, each of which enters a red blood corpuscle as soon as possible. In an ordinary case, due to one inoculation, the sporulation is simultaneous for all the parasites and causes the chill. The recurrence of the chill, means, therefore an increase in the number of the parasites and an increased number of blood corpuscles attacked. If a mosquito bites a patient of this kind many of the *Plasmodia* and their spores may be taken up; but even if the example were the proper species of *Anopheles* this would not cause infection, because in this condition the *Plasmodium* can develop in human blood alone. In the course of time, however, there are produced bodies resembling the ordinary spores; but which do not attempt to enter blood corpuscles. On the contrary they float about until devoured by the leucocytes or until withdrawn from the human body. If so withdrawn these bodies develop further and some produce flagella or threads which break off and unite with the other, larger, round bodies. These are the sexual forms of the *Plasmodium* and the flagellate bodies are the males. Thus far the development may take place anywhere outside the human body and in any kind of mosquito; but if the organisms be taken from the blood by the proper *Anopheles* the development goes further. The fertilized macrogamete works its way into the stomach wall of the insect, develops there and, in about a week is mature, discharging into the body cavity of the insect thousands of "blasts" which tend to work their way into the salivary glands of the host. If now, the mosquito again bites, it introduces with the saliva a number of these blasts which at once work into blood corpuscles, establishing the disease in a susceptible individual.

There is required, therefore, for the transmission of malaria from one person to another, the following: A patient suffering from the disease, in whose peripheral circulation are the sexed organisms or gametocytes; the proper species of *Anopheles* at just the right time to draw these organisms into its digestive system: undisturbed development at a temperature not much below 80° for at least a week: an uninfested individual who is not immune and who is bitten by the diseased mosquito. All these conditions must be satisfied before infection can take place, and the problem for the sanitarian is how to interfere with this life cycle in such a way as to prevent its completion altogether or in large part.

The species of *Anopheles* winter as adults, only the female surviving. Impregnation takes place in the fall, and as early as October 6 some fertilized females begin to seek shelter, though larvæ are found through November even in pools that have been ice covered. The important point is that these mosquitoes do not feed before they become dormant and are therefore incapable of carrying over the *Plasmodium* in any stage. The organism lies dormant in the blood of malarial patients ready to begin development when conditions favor. As to places of hibernation, *Anopheles* selects houses or barns and preferably cellars. From a single uninhabited house near Bordentown several hundred examples were taken and from the cellar of another, occupied house, nearly one hundred were secured. In the cellar of my own house at New Brunswick a number were taken last winter and in the storerooms of the Experiment Station buildings examples may be found all winter. Dormancy is a matter of temperature: in freezing weather the mosquitoes may be readily taken off the walls with the fingers and will make no attempt to move. At 60° they will fly readily and in a house kept at a temperature above 75° they will become active and may bite. Winter development of malaria is by no means unknown and means only that in a warmed house one or more active specimens of *Anopheles* obtained a chance to bite first an individual containing the *Plasmodium* in the proper stage and afterward one that was previously uninfected.

Winter fumigation of cellars in malarial districts is therefore a sanitary precaution of the highest value since it will destroy the hibernating mosquitoes that would start the breeding next spring. Equally necessary is the very thorough treatment of all persons afflicted by malarial fevers, for if we lessen or destroy the sources from which mosquitoes may be infected, the mere presence of the insect can cause no injury. It makes no difference how many *Anopheles* we may have in a given locality; unless there is a chance to get malarial blood they cannot of themselves produce malarial disease.

We might, therefore, from the strictly sanitary standpoint ignore the mosquito altogether and, by protecting all patients from bites at night until thoroughly cured, could render the insect altogether harmless.

When warm weather becomes fairly established in May, the *Anopheles* awakens from its winter nap and flies about. Its first instinct is to eat, and this it does, feeding mainly on plant juices, though it does not disdain a meal of blood if it is easily obtainable.

Out of the thousands that go into hibernation only hundreds emerge in spring. They lay their eggs in quiet pools containing grass or other vegetation, but development is slow and the death rate high. It is difficult to find *Anopheles* larvæ until midsummer and adults are rarely seen, even in localities where larvæ are found. Late in July and early August increase becomes marked and *Anopheles* larvæ appear everywhere. They are just as apt to occur in a temporary pool in an open lot as they are along the quiet grassy edges of a pond or meadow brook. I find them in the water pails in my garden and in the brackish pools of the Newark meadows. I have never found them in really foul water and rarely in woodland streams; but aside from that, there is scarcely a bit of sheltered water in which they will not occur. On the salt meadows about Newark, Elizabeth and Jersey City thousands of *Anopheles maculipennis* breed in late August and early September, and I have no doubt that many of these find their way well into the cities. That the *Anopheles* will fly half a mile from its breeding place over a level country I have proved to my own satisfaction. I am not so sure that its flight is limited by that distance.

On this point I speak advisedly, because for six full weeks I have had an experienced collector exploring the marshes from the Passaic to the Rahway River. I have spent days on the marshes along the South Jersey Coast and collections made from hundreds of pools have been sifted in the laboratory.

To learn the condition of affairs in my own city, I had my assistant explore systematically every square laid down on the New Brunswick map and some fifty odd places were plotted where *Culex* and *Anopheles* larvæ were found. All of these breeding places in one ward were treated twice by the Board of Health with chloronaphtholeum and each time the larvæ were killed off; but by cooperation with the Street Commissioner more than half these breeding places can be permanently cured at little expense and most of the balance can be reached by compelling proper drainage, repair of gutters and other channels for carrying water.

Here is the field for local sanitary authorities. There is no reason why mosquito breeding pools should be allowed within any city, town or village limit, and any pool may breed *Anopheles* in late summer. Good sanitation demands the removal of such plague spots and the abolishment of the mosquito pest. If all the local authorities throughout the State acted toward the same end, even a single year would show marked results.

The life cycle of *Anopheles* is known for the entire year and for every stage: the places preferred for breeding are known: the methods of destroying such breeding places are known: it remains for us to apply our knowledge and on this point it should be said that the application of our knowledge should be intelligently made. Oiling a pond containing fish or other aquatic life is an absurdity that does more harm than good and creates an offense as bad as that sought to be abated. Trimming the edges so as to permit the small fish to get everywhere will keep the pond clean and will be a permanent improvement.

In company with Dr. W. N. Berkeley, of New York city, and Mr. W. P. Seal, of Delair, N. J., I looked over some of the bodies of water in Central Park, New York city. Not a mosquito larva was found in the larger lakes and ponds; but in the woodland pools with shallow overgrown border *Anopheles* and *Culex* were found in any numbers. No mosquito larva lives in any ripple area in any body of water and very few indeed escape their natural enemies in permanent bodies of water not too much choked with vegetation.

I have indicated in an earlier paragraph, that adult *Anopheles* travel for some distance and also that the salt marsh areas in our State are dangerous, in some places at least. Here is a point where local action is not sufficient; but just how this matter should be attacked has not yet been worked out, and is still under investigation.

Little time remains for mention of those other mosquitoes that make life a burden, if they do not actually cause or carry specific disease. The species that dominates the entire Pine section of South Jersey comes from the salt marshes miles away, and local methods are useless. There are not enough mosquitoes bred in the freshwater swamps in this region to cause serious annoyance; but the incoming visitors make up all deficiencies in the local supply. Even the saltmarsh must not be too generally condemned. More than three-quarters of the entire salt marsh area of the State is absolutely safe from the mosquito breeding point of view and the problem will, I firmly believe, narrow itself down until it reaches a very simple and not unreasonably expensive conclusion.

I have studied this species during the past season from every point of view; have bred it from the egg, have gathered eggs on the marshes and kept them dry for weeks; indeed, I have now larvæ hatched a few days ago from eggs gathered in mid-July, and I believe I know the habits and breeding places, at least as well as any one. Speaking from this knowledge, I believe that the day is not far distant when the shore mosquito will be only an exceptional occurrence; but that day has not yet arrived.

THE SYMPTOMATOLOGY OF TABES: AN ANALYSIS OF 140 CASES OF LOCOMOTOR ATAXIA.*

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PART II: SYMPTOMATOLOGY OF TABES.

Subjective Symptoms.—The subjective symptoms of tabes are variable; the objective symptoms are constant. The former consist of pain usually in the lower extremities variously described as shooting, lancinating, lightning-like, spot-pains of varying severity and duration, often accompanied with involuntary contraction or drawing up of the part in which the pain is manifest; of paresthesia of the extremities and trunk described as numbness, formication, "pins and needles," sensation as if the part were encased in something soft and thick, as if the skin was too tightly drawn around the part, or as if a limb or a portion of it was being compressed; of uncertainty in standing and walking, particularly in public and unaccustomed places in which vehicles and people are passing, on going down stairs and on attempting to move about in the dark or to stand with closed eyes; of leg weariness and of giving way of the knees; of the necessity of watching the feet when walking, of tendency to fall when hurrying, of disturbance of the function of the bladder, particularly of diminished expulsive force, and of incontinence, diurnal or nocturnal or both; of lessened copulative capacity and of diminished inclination for sexual indulgence; of diplopia, usually transient and recurrent, occasionally associated with paralysis of some of the eye muscles apparent to the patient himself; of attacks of agonizing pain and disturbed function in some viscus or portion of the body, such as the stomach, the bladder, the rectum, the larynx, penis, clitoris, etc., called visceral crises; of vasomotor and trophic manifestation which will be enumerated below, and of the general accompaniments of impaired tone, lowered vitality, loss of weight.

Objective Symptoms.—These, named in order of their constancy and diagnostic importance, are loss of the pupillary light-reflex in conjunction with preservation of the contractility of the pupil in accommodation (Argyll-Robertson sign); loss of the tendon jerks, such as the knee and ankle-jerk (Westphal sign); inability to stand steadily with the feet in apposition and the eyes closed (Romberg sign); ataxia of the extremities, principally of the locomotive apparatus, but also of the upper and cephalic extremities; disturbance of sensibility, slowness of recognition of tactile stimuli, hypesthesia, anesthesia, all "segmental," *i.e.*, corresponding in their display to the distribution of the sensory nerves of the spinal segments; analgesia of similar distribution; hypotonia; disturbance of the deep sensibility; loss of sensitiveness on pressure of the ulnar nerve in the olecranon fossa (Biernacki's sign); of painless ocular palsies, most frequently of the third nerve; of optic atrophy having the characteristics of primary decay; of trophic disturbances of which the commonest are painless enlargements of joints (tabic arthropathies), ulcers having a punched out appearance; perforating ulcers; atrophy of muscles giving rise to deformity such as the "tabic foot," fragilitatis ossium and tachycardia.

The object of this study is a detailed consideration of these subjective and objective symptoms. Before doing so some attention must be given to the types of tabes.

Types of Tabes.—One does not encounter and examine many cases of tabes before it is impressed upon him that scarcely two cases are alike, either in the manner in which the symptoms unfold themselves, or in their constancy or association. This experience is puzzling to the beginner. Because of this it may be well to emphasize the fact that the disease usually conforms in its clinical delineation to one of several types: (1) The type in which pain of great severity overshadows other symptoms, the neuralgic type; (2) the type in which disturbance of the sympathetic nervous system predominates; vesical symptoms, crises, arthropathies, etc.; (3) the type in which motor symptoms predominate, profound ataxia, the patient becomes very ataxic, perhaps even bedridden a few weeks or months after onset (the antithesis of the benign type); (4) the type in which optic atrophy develops early; (5) the type in which the symptoms are particularly of the cephalic and upper extremities—cervical or high tabes; (6) the type in which the disease comes on very slowly; (7) the type that comes on precipitately. I am not quite sure whether a clinical division should be made to include cases with (8) cerebral symptoms, not paresis, but I am inclined to think there should be. This is an artificial distinction of course, but it facilitates recognition of the disease by the general practitioner, and especially correct interpretation of those cases that do not conform closely to the typical case depicted in the text-book. Moreover, the prognosis of tabes varies with the clinical form of the disease. The outlook for the patient can be forecast with much greater accuracy if this fact is recognized and kept in mind.

I shall depict briefly the manner of development and clinical features of a few cases to illustrate what may be called a typical case of tabes and cases that conform to above division.

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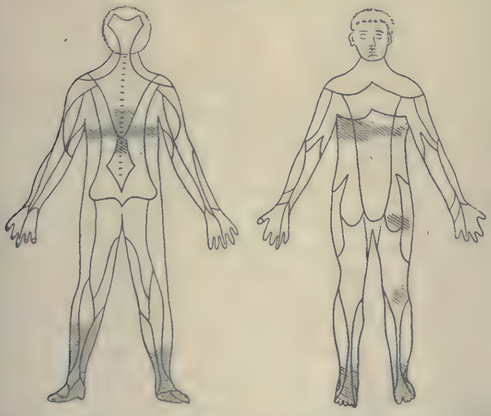
* Part I of this series appeared in the MEDICAL NEWS of January 3.

Case I.—Typical, Unselected Case of Tabes.—Male, forty-eight years old, contracted syphilis when thirty-six years old; infection moderately severe; under treatment for two months at the time of the initial lesion and about an equal length of time when sores developed on the legs the following year. Initial symptom of present disease when forty years old, *i.e.,* four years after infection, consisting of easily induced fatigue of the legs, weakness and sense of uncertainty on standing and walking. Later he complained of headache, and for a number of weeks at this time diplopia was very distressing. This disappeared and has not troubled him again until lately. The next symptom to develop was pain in the back, a dull ache, radiating to the epigastrium. Later (five years ago) shooting pain in the legs first developed. Pain of this kind came on about once a week, lasted a few hours, and then disappeared. He thinks the attacks were more frequent and of greater severity when the weather was inclement. Four years ago, immediately after an operation for hemorrhoids, he first suffered from retention of urine; after that he frequently experienced difficulty in starting the stream. Since then he has been troubled more or less all the time from incontinence of urine. Occasionally the rectal sphincter is incontinent. He complains of burning sensation through both heels, paresthesia of the legs, especially below the knees; of uncertainty of gait, especially when walking in a crowded thoroughfare or in unfamiliar places; of giving way of the knees, of turning in of the ankles, of tendency to fall when he attempts to hurry, of difficulty in descending stairs, of lightning-like pain in the legs, and of impotency.

Examination shows ataxia of gait which is very profound when he attempts to walk with the eyes closed, or backward; ataxia of station very much increased by closing the eyes, and ataxia of the upper extremities manifest on attempting to perform delicately coordinated movements. All the tendon jerks are unelicitable; the skin reflexes are present but slow; the plantar jerk is of the normal flexor type. There is profound hypotonus. The straightened lower extremities can be brought to an angle of 250 degrees with the body. The pupils are equal, pin-point in size, and do not react to light; they do react slowly, however, in accommodation. Ophthalmoscopic examination negative. Tactile sensibility is diminished over a narrow area on the anterior surface of the chest, a corresponding area on the posterior surface and along the spine and in the legs, especially over the posterior surfaces. The sensory disturbances are indicated by the accompanying chart. The pulse is 90; the heart of normal size, and presents no abnormalities save accentuation of the second sound. Mentally, the patient and the family have noted no change.

Fig. 1.



Shading indicates areas in which there was blunting of tactile sensibility in a typical case of tabes.

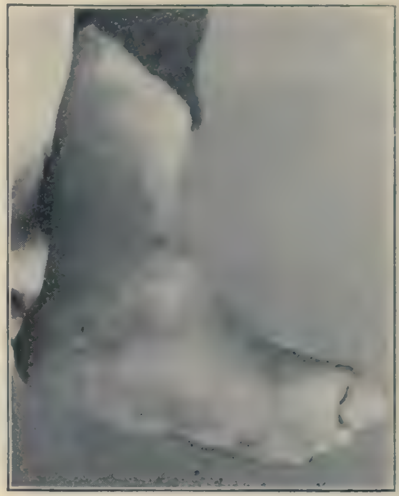
Case II.—Neuralgic Type.—Mr. X., forty-three years old; occupation, county clerk. Denies syphilis, but has had several attacks of gonorrhea; has lived freely. When thirty-eight years old he began to have attacks of pain principally in the back and in the legs, in the former location it was described as boring, in the latter shooting. For the relief of this pain he went to Hot Springs, Ark., and took antisyphilitic treatment, and for a few months following this trip the pains were less severe. The next year the pains returned, this time in the arms as well as in the legs. He has had no trouble in locomotion except when fatigued, a condition that is easily induced. He complains of girdle sensation, of occasional diplopia, and of enfeebled memory; but the one symptom that overshadows all the others is pain. It is paroxysmal, of intolerable severity, of increasing frequency, made worse by mental and physical fatigue, and somewhat alleviated by lying down. Sometimes it is so severe that he has to have morphine administered hypodermatically. He has had at times attacks of pain in the stomach, followed by nausea and vomiting, which continue for several hours, accompanied by great prostration; typical attacks of gastric crises. For the past year or two he has had now and then difficulty in urinating, and sometimes incontinence at night. His sexual vitality has gradually decreased. There is no complaint of locomotion, of unsteadiness of any kind or of incoördination. Examination shows loss of knee-jerks and ankle-jerks; plantar, cremaster and abdominal reflexes preserved; Argyll-Robertson pupils; swaying when the eyes are closed and the feet together; disturbance of sensibility, consisting of analgesia and hypesthesia of the lower extremities. There is no hypotonia. Ophthalmoscopic examination shows normal optic nerves.

Caase III.—To Illustrate the Type in Which Disturbance of the Sympathetic Nervous System Predominates; Vesical Incompetency.—Man, single, forty-four years old, mechanic. In December, 1885, he contracted syphilis. The infection was followed by mild secondary manifestations. He was under constant treatment for two years. The first symptom of his present trouble developed in December, 1892, *i.e.,* seven years after the specific infection, and consisted of constant desire to urinate. It came on suddenly while in a theater. This continued for three or four months, and during this period the ardor was so great that he would have to relieve himself every half hour or more. For this trouble he was treated with electric sounds. During one of these treatments a false passage was made which took several weeks to heal. Later he began to get attacks in which the bladder would not empty itself at all and he would have to resort to various devices, one of which was to work the arms up and down vigorously over the head in an extended position with or without listening to running water at the same time. Occasionally straining when sitting down would succeed, but frequently it was necessary to use a catheter. He was first seen by me in January, 1898. There were no shooting pains, no girdle sensation, no diplopia, no ataxia, no mental symptoms, and there are none now, five years later. The bladder symptoms continue. Examination showed slight Romberg symptom, the knee-jerks and ankle-jerks cannot be elicited, the cutaneous reflexes are normal, the pupils are typical Argyll-Robertson, pressure upon the ulnar nerves does not cause pain, and there is distinct hypotonia. He is distinctly analgesic over the ulnar areas, but there is very little sensory disturbance in the lower extremities. He stands on his feet nine hours a day, works hard, and still the disease does not seem to have made the slightest progress in the five years that he has been under my observation. To-day it would be impossible to make the diagnosis without an examination to reveal the physical signs. In fact, there is nothing about his condition that suggests tabes.

Case IV.—Tabes, Ushered In With Gastric Crises.—A man, thirty-one years old, contracted syphilis when twenty-two years of age, and received vigorous and thorough treatment with mercury and iodide of potassium. When twenty-nine years old he was attacked suddenly, while in Chicago, with pain and sense of oppression in the epigastrium followed by uncontrollable vomiting and great prostration. The symptoms resisted internal and hypodermatic medication and were considered to be indicative of ptomaine poisoning. This attack and the prostration following lasted nearly a week. Since that time he has had similar attacks and less severe attacks once a month or oftener. Aside from this he complains of nothing except easily induced fatigue, of insomnia and mental irritability. Examination revealed Argyll-Robertson pupils, absence of the tendon-jerks in the lower extremities; slight ataxia of station, slight ataxia of gait on walking backward, distinct disturbances of sensibility; hypesthesia and analgesia in the peroneal areas, and Biernacki's sign. Despite the fulness with which the disease was represented objectively, no other symptoms than gastric crises appeared for nearly three years after the first attack. Then he began to complain of shooting pains in the legs, of paresthesia in the feet and legs and later of difficulty in passing urine, particularly if he neglected to pass water at stated intervals. Until the present time, nearly seven years after the initial symptoms of tabes, no other symptoms save the gastric crises and occasional attacks of pain have become conspicuous.

Case V.—Tabes With Arthropathy. Painless Enlargement of a Joint the Initial Symptom.—As a typical illustration of such a case, I cite the following history: J. R., thirty-five years old; syphilis when sixteen years old. Extensive secondaries; treated for about six months. Two years ago the left ankle began to get large without attributable cause. The swelling was unaccompanied by pain. In about four months the swelling went down somewhat, but it has never been well since then. The condition of the joint at the time he came under observation is shown by the accompanying photograph. He has been under almost continual treatment for rheumatism. Aside from this he does not complain, but when questioned says that he has a "sciatic" pain which comes occasionally in the left pectoral muscle, and during damp weather shooting pains in the knees. He has difficulty in holding the urine at times; when he wants to start the stream he cannot; he urinates more easily when sitting than when standing. This, with progressive impotency, dates back one year. He also admits occasional diplopia and numbness of both forearms, especially along the course of the ulnar nerve. Examination shows Rombergism, slight ataxia of gait, slight ataxia of the upper extremities, the knee- and ankle-jerks are absent. Plantar, cremaster and epigastric reflexes present, and of

Fig. 2.



Arthropathy of the ankle which developed early in the course of tabes.

normal type. Analgesia over the entire surface of the legs, arms and forearms, and hypesthesia over the same areas. The pupils respond to light and accommodation, the optic nerves are pale.

Case VI.—Tabes With Early Optic Atrophy.—The following history is cited to illustrate the type of case in which optic atrophy is an early symptom. This in contradistinction to the cases of tabes that develop optic atrophy during the course of the disease. A married woman, fifty-four years old, was seen July 7, 1900. She dates the beginning of her disease to June, 1899. Before then, however, she had been very nervous and suffered from occasional attacks of vomiting and diarrhea without attributable cause. She had diplopia at times, especially when looking downward. Numbness of the fingers and toes was complained of four months previous to the onset of blindness, which she considers to be her disease. In June, 1899, she noticed for the first time difficulty in sewing and reading on account of defective sight. The impairment was most marked at first in the left eye. The loss of vision was rapid and within a year it had so far disappeared that she could only tell light from shadow. Examination shows the pupils small, of equal size, and unresponsive to light. The optic nerves show a typical picture of primary atrophy. The knee-jerks and ankle-jerks cannot be elicited. There is slight but distinct ataxia of station and locomotion, but no ataxia of the upper extremities. There is well-marked hypotonia. At this time the patient maintained that there were no symptoms referable to the bladder, but later admitted incontinence.

Case VII.—To Illustrate Type in Which Motor Symptoms Predominate.—Mr. X., forty years old; occupation, gambler. Syphilis when twenty years old, ordinary cutaneous and mucous membrane accompaniments. Treated locally and internally by a syphilologist for "a long time." First symptoms of tabes 14 years after luetic infection, consisting of lassitude, sensation of numbness around the anus, tired feeling over the sacrum. He was treated for enlargement of the prostate, but without relief. Within a year after the initial symptoms he began to have pains in the legs. The pain would shoot through the nerves as if he were stabbed, then it would settle down in a spot and recur intermittently for four or five hours. The frequency of these attacks varied. About a year later he first noticed difficulty in walking, he would become agitated in crossing a crowded street, he became uncertain in going down stairs and in walking through a narrow passageway. About the same time or earlier he remarked that he was becoming impotent and a few months later he experienced difficulty in micturition. Sometimes he would have to wait and press down hard before the stream would start, at other times there was incontinence. He complained also of a tight band sensation around the waist; of a sensation in the hands as if the skin were tightly upon the stretch, and of a sensation in the fingers as if thin layers of gutta percha were over them. The difficulty of station and locomotion increased rapidly and within four months after its appearance he was unable to walk unaided. He rapidly became bedridden and remained so for nearly a year, during which time his general health improved. He then began to gather capacity to stand and slowly he learned to walk and soon was able to get around with the aid of a stick, but within a year he became practically bedridden again.

The examination showed: (1) ataxia of gait and station; (2) absence of the knee- and ankle-jerks; (3) pupils unresponsive to light, but contract quickly to accommodation; (4) analgesia over the entire surface of the lower extremities and delayed tactile sensibility; (5) pressure upon the ulnar nerve at the elbow causes no discomfort and there is well-marked analgesia over the ulnar distribution; (6) hypotonia very marked in the lower extremities, the patient can take the right foot with the right hand, and the knee being extended, draw it up on a line with the head; (7) the plantar, cremaster and abdominal reflexes are elicitable, the response of the two last-mentioned being slow; (8) pulse varies between 90 and 95; (9) fundus of the right eye normal, fundus of the left eye showed a deep physiological excavation.

Case VIII.—Benign Tabes.—The following case illustrates what has been called a benign form of the disease, and it shows the necessity of basing the diagnosis upon the elicitations of an examination. S. L., a Jewess, forty-five years old, came to the clinic complaining of headache and of vertigo, which she said were of about four months' duration; it was for this that she sought relief. There were no indications from casual examination that there was anything else the matter with her. Inquiry reveals that while she was nursing her second child, a boy who is now eighteen years old, that there developed upon the nipple of her right breast an eating ulcer, which she says came from a sore upon the child's lip, diagnosticated by the physician who was in attendance as a chancre, and which required five months' time in which to heal. The child developed cutaneous and mucous membrane secondaries and, although he has been under almost continual treatment from that time until the present day, he has still osseous manifestations of syphilis which are ameliorated by taking very large doses of iodide of potassium. The mother did not take medicine very regularly after the initial infection, and in consequence the child that was born next had an extensive syphilitic eruptation and died at the age of three months. After this the mother took medicine all the time, inunctions and iodide of potassium, and the next child was born alive and healthy and has been well since. Then followed a dead child, a miscarriage, and finally, six years ago a healthy child which is now all right.

On interrogation the patient says that for the past eight years she has had shooting pains in the legs, first in one part then in another, each time lasting from one to five seconds and they are often of such severity that they draw the leg up. Sometimes an attack of such pains lasts as long as twenty-four hours, but usually not more than three or four. She is quite sure that they are worse in wet weather. About five years ago her feet troubled her a great deal; she felt that she was constantly walking on sharpened nails, but for the last two years this has not been so severe. Occasionally she sees double, and often girdle sensation is very annoying. Aside from this there are no symptoms. She says that she has no difficulty in gait or station, and if it were not for the attacks of indigestion and easily induced fatigue she would not know that there was anything the matter with her aside from headaches and vertigo, which she considers to be her disease and for which she seeks relief.

Examination shows slight ataxia of station, no ataxia of locomotion; slight inco-ordination in the upper extremities; absent knee and ankle-jerks; Argyll-Robertson pupils; preservation of the accommodation reflexes; slight hypesthesia over the distribution of the peroneal nerve (no other sensory disturbance); perversion of the muscular sensibility in the legs; none in the arms; marked hypotonia of the legs, when the patient is lying on the back, the extended leg can be brought to a right angle with the trunk; slow, but easily elicitable plantar and abdominal reflexes; pulse 92; no vasomotor symptoms; no involvment of the special senses.

Case IX.—Initial Tabes.—The following may be taken as an example of initial tabes. It will likewise illustrate the course of the disease in the earlier part of its career. D. W., thirty-eight years old. Syphilitic infection when twenty. Complains of pain in different parts of the body, arms, legs and back. "The skin hurts him." "During the night the feet get stiff, and after sitting in the day they feel numb." Duration of these symptoms, six months.

Examination: Pupils unequal, sluggish, light reaction, especially in the left pupil, with perceived contraction to accommodation. No motor paralysis, no ataxia of gait or station, no Romberg symptom. Tendon jerks fairly normal. An area of hypesthesia at the level of the sixth dorsal vertebra, especially on the anterior surface of the trunk. Distinct hyperesthesia over the remainder of the trunk, arms and legs, especially in the latter. The slightest contact is very disagreeable to him and the touch of the underclothing hurts him.

Examination one and a half years later shows ataxic gait, Rombergism, unevenness of the pupils, Argyll-Robertson phenomenon. The tendon jerks are absent, there is anesthesia of the feet, legs and trunk, and delayed sensibility in the legs; in other words, the most typical accompaniments of tabes.

When the patient came first under observation in the dispensary the diagnosis was made upon the history of pain, the condition of the pupils and the anesthesia of the chest. It would perhaps be difficult to defend a diagnosis made upon these three symptoms alone, but the results of the examination eighteen months later show how fully it was justified.

Case X.—High Tabes.—Male, forty years old, became infected with syphilis when twenty-two years old and received treatment only during the local lesion and the erythema that followed it. The initial symptom of tabes consisting of pain in the lower part of the back appeared when thirty-two years old, *i.e.*, ten years after the syphilitic disease. He did not consider himself sufficiently ill to seek medical advice, however, until four years ago, when paresthesia in the thumb, index finger and right hand developed. The next symptom to develop was shooting pains in the hands and impaired coordination which interfered with his work, that of making neckties. After this he noticed a sense of uncertainty in walking in the dark, difficulty in going downstairs, incontinence of urine, difficulty in defecation, loss of the expulsive capacity. The next symptom to develop was a severe and uncontrollable paresthesia and itching of the right orbital region which has persisted until the present time. At times this was associated with photophobia. During the year before coming under observation he had occasionally complained of diplopia. Examination shows ataxia of gait and station, a moderate degree of double ptosis, mild convergent strabismus, pupils irregular, uneven, no response to light, response in accommodation; ataxia of the upper extremities, absence of the triceps-jerk, ataxia of the lower extremities; knee-jerks elicitable, right Achilles-jerk absent, left present; disturbance of tactile, pain and thermal sensibility in the upper extremities and over the thorax. Deep sensibility of the upper extremities very much impaired.

Case XI.—Cervical tabes with bulbar involvement.—Mr. G., forty-four years old, married, a driver, was seen at the clinic in September, 1902. Family history not important. His wife has had two miscarriages. Has never had rheumatism or rheumatic pains. Smokes and chews tobacco excessively and is intemperate in the use of alcohol. Eighteen years ago he had a chancre and was treated externally and internally one month; no secondaries. He has had two attacks of gonorrhea. No history of trauma or of gastro-intestinal trouble. Seven years ago he had difficulty in urination and a stricture was detected and cut and the symptom relieved. The first symptom of the present trouble developed two years ago: while driving along the street he would see double, one image above and outside the object. This diplopia was not constant. Then intermittent ptosis of the left eye accompanied with lacrymation developed; (2) difficulty in chewing on the left side, especially in masticating tough food; (3) difficulty in voiding urine, involuntary intermission of the stream; (4) sensation of soreness and hyperesthesia of scalp; (5) progressive weakness of the musculature of the lower jaw; (6) numbness of the cheeks and face, especially on the left side; (7) alteration of the voice, followed by hoarseness and difficulty in swallowing; (8) drooling; (9) peculiar tracheal cough without apparent cause, and choking sensations, relieved at times by raising mucus; (10) paresthesia of the throat. A few months ago he developed (11) regurgitation of fluids through the nose; after its existence for two months it became much less severe. Now solids are swallowed easily. The sense of smell is impaired on the left side; taste and hearing normal. About three months ago he noticed unsteadiness in walking. This was particularly manifest in going up and down stairs. At times he would stagger as if he were drunk. This had become progressively worse. Weakness of the muscles of the neck began to develop a few months ago. Vision has been impaired three months. Weakness of the tongue has existed since two months. Ataxia of the hands has existed three months. No precordial pain, anxiety or palpitation; no gastric or other crises; no girdle sensation; no lightning pains. Incontinence of urine has been troublesome for four months.

Examination shows a tall, poorly nourished individual, with conspicuous, tortuous temporal arteries and peculiar, relaxed, inattentive facial expression. The pupils are equal, of large size; they reach sluggishly to light, directly and consensually, but promptly to pain stimuli and in accommodation. Movement of the eyeballs in outward and upward directions is much impaired. On forced outward movement it is accompanied by nystagmus-like twitching. The right palpebral aperture is smaller than the left. Ptosis of the right upper lid is nearly complete. The forehead cannot be wrinkled. Weakness of the orbicularis palpebri is shown in inability to close the eyes on the greatest effort. The lower jaw hangs indifferently and is ever in apposition with the upper jaw. Although it can be approximated to the latter it immediately drops away, the jaw-jerk is absent and there is marked wasting of both temporal and masseter muscles. There is distinct reaction of degeneration to the faradic and galvanic current. There is constant drooling. The patient has difficulty in puckering the mouth and with intrabuccal movement of the tongue. There is hypesthesia over the upper face on both sides and hypalgesia amounting in places to analgesia over the same area. The sensibility of the lower part of the face is very well preserved. There is much more weakness of the left half of the tongue than of the right. The sense of taste is normal, that of smell much impaired. The pharyngeal reflex is lively. There is paralysis of the left recurrent laryngeal and some paresis of the right pharyngeal nerve. The voice is hoarse, raucous, and a peculiar tracheal cough is very disturbing.

There is some wasting of the sternocleidomastoid muscles, and to a much lesser degree of the trapezii. Fibrillary twitchings in the muscles of the shoulder girdle are apparent. The tendon reflexes of the upper extremities cannot be elicited. There is increased fasicular myotatic irritability, the muscles themselves are very flabby. The knee-jerks and ankle-jerks cannot be elicited and the tendons are very soft. The superficial reflexes are preserved and normal. Motor power is diminished all over the body, but there is no atrophy of the lower extremities. Deep sensibility is impaired in the lower extremities, preserved in the upper extremity. There is slight swaying on standing with the eyes closed, and the body is made decidedly unsteady on attempting to walk with closed eyes. Pain sensibility is disordered in the legs, the dorsal surface of the feet, the abdomen and the face. In the same areas there is delay in the interpretation of tactile stimuli and hypesthesia. There is pronounced hypotonia of the upper extremities and of the lower extremities. The pulse is 120, the tension below normal, the vessel walls degenerated. Ophthalmoscopic examination is negative. Examination of the urine shows nothing abnormal save diminution in the amount of urea and the existence of a few hyalin casts.

INITIAL SYMPTOM OF TABES.

The initial symptom of tabes was elicited with much care in all cases, but especially in those that were seen in private practice. The results of this elicitation are stated in the accompanying table. In some instances, especially those encountered in hospital practice, the patient had forgotten what the earliest symptom of his disease was, or he had lost track of the order in which the symptoms had developed. One thing that has impressed itself upon me in studying the initial manifestation of tabes is that the symptom which the patient says were the first to occur are often found not to be the earliest indications of the disease. They are merely the symptoms which have given him enough trouble to prompt him to consult a physician. This may account in a great measure for the relatively small proportion of cases in my statistics in which pain is stated to be the initial symptom. Again and again I have had this experience: In response to the question, "What was the first symptom of your present trouble?" the reply was "pain in the legs," or "pain and numbness of the feet," but on close inquiry find that for a considerable time previous to the occurrence of this symptom the patient had experienced inexplicable leg weariness, tired, sore feeling over the coccyx and sacrum, delay in starting the urinary stream or the necessity for bearing down hard in micturition, falling off in sexual vigor and copulative capacity, transient attacks of diplopia and so on.

The initial symptom was noted in 126 cases. The accompanying table states the results:

	Cases.	or Per Cent. of 126 Cases.
Shooting pain in leg...........	31	24.6
Vague pain in side...........	2	1.58
Sticking pain in lumbar region.	2	1.58

Pain in heel	3	2.38
Pain in groin, knees and legs	1	0.79
Vague pain	6	4.76
Shooting pain about waist and radiating to leg	2	1.58
Pain in back (throbbing)	1	0.79
Severe spot-pain	1	0.79
Head pain (neuralgia)	2	1.58
Difficulty of urination, or incontinence	7	5.55
Loss of sexual power	4	3.17
Giving way of legs	6	4.76
Weariness of legs	6	4.76
Ataxia	6	4.76
Vertigo	3	2.38
Numbness of arms	2	1.58
Nocturnal emissions	1	0.79
Gastric crises	6	4.76
Rectal crises	1	0.79
Pruritus (intolerable itching all over)	1	0.79
Ulcer of the foot	2	1.58
Ptosis	5	3.96
Weakness of knees	6	4.76
Numbness of feet	5	3.96
Psychroesthesia of knee	1	0.79
Numbness of leg	5	3.96
Diplopia	7	5.55
Partial paralysis of leg	1	0.79
Patient does not recall, or not particularly specified	14	11

Pain in one part or another of the body was the initial symptom in 51 cases, in 40 per cent. These figures do not agree with those of other investigators, and for the reason already mentioned. For instance, v. Sarbo, in a recent study (*Deutsche Zeitschrift für Nervenheilkunde,* Vol. 23, 1902), states that lancinating pain was an initial symptom in 67 per cent. of his cases.

Pain: Its frequency, character and seat in tabes.—In contrast with the relative infrequency with which pain was noted as an initial symptom we have the statistics showing how often pain was noted as a symptom in the course of the disease. One hundred and twenty-six of the 140 patients complained of pain in one form or another *i.e.,* 90 per cent. of the cases. These figures, indicative of the frequency of pain in locomotor ataxia, are in harmony with those of Bramwell (Brain, 1892), 95 per cent.; Gowers (Disease of the Nervous System, Vol. I.), 90 per cent.; Leimbach (*Deutsche Zeitschr. f. Nervenheilkunde,* Vol. VII., 1895); (Erb's Cases), 88.25 per cent., and Riley (*Journal of Nervous and Mental Diseases,* 1898), 89 per cent. In the statistics of Bonar (Starr's Cases, *Journal of Nervous and Mental Diseases,* May, 1901) pain was made out only in 79 per cent.; and Thomas (*Bulletin of the Johns Hopkins Hospital,* 1899, Vol. X.), 54 per cent. The infrequency of pain as a symptom of tabes in the statistics of the two last writers is to be explained, I believe, by the fact that their cases were largely dispensary patients. In my own dispensary patients' pain was complained of less frequently than by patients in private practice. It is not that tabic patients who seek relief in dispensaries do not have pain just as often as others, but that they go there to seek relief for some symptom whose existence prevents them from earning a livelihood, and is therefore of more importance to them. They may not volunteer a history of pain, but when their history is elicited carefully pain of some kind will be found to exist in the vast majority of them. Another point that should be referred to is that the pain is not always "shooting" by any means. Although pain thus best designated is the most common variety, "burning," "tearing," "tingling," "rheumatic," are some of the designations not infrequently used. Cases in which there is pain thus described should be (and are in my statistics) reckoned among those in which pain is a symptom.

The portion of the body in which the pain was manifest and the patients' characterization of the pain are shown by the following table:

Predominant Seat of Pain.—

	Cases.	or Per Cent. of 126 Cases.
Lower extremities	84	67
Upper extremities	5	4
Head	4	3.1
Back and trunk	11	8.7
Abdomen and trunk	11	8.7
Testicles	3	2.3
Everywhere	8	6
In the lower extremities and elsewhere	121	96

Thus it will be seen that in the 126 cases in which pain was a symptom it was, according to the patient's statement, predominantly in the lower extremities in two-thirds of the cases. In the 42 remaining cases it was of greater severity in other portions of the body, as shown by the table. In almost all the cases (*i. e.,* 121 out of 126) in which pain occurred in other parts of the body, it occurred also in the lower extremities.

The character of the pain as noted in the history, the designation either of the patient or the interlocutor is as follows:

	Times.
Shooting, or sharp shooting	49
Stabbing, cutting, lancinating	18
Lightning pains	14
Darting, jumping, trolley-pain, zig-zag	7
Rheumatic and neuralgic	13
Boring, screwing	6
Dull, aching	4
Trembling	2
Electric	2
Breaking	2
Twitching, stinging	2
"Terrific"	2
Prodding with a bunch of needles	1
Plunging a triangular red-hot file into the legs and twisting it around	1
Vague	1
Like a toothache	1
Sciatic pain (in the chest)	1

Factors which, according to the patient, seemed to increase the frequency and severity of the pain were noted as follows: Inclement weather and abrupt barometric variation, 38 cases; cold weather and exposure to cold, eight cases; fatigue, 17 cases; excitement and emotional exaltation, four cases; indigestion, five cases. In about one-half of the cases the patient was unable to say what influenced the pain to greater severity or frequency. In 12 instances it is recorded that there was an elevation of temperature of from one-half to two degrees during the paroxysms of pain, and in seven subnormal temperature following severe paroxysms. In a few instances it is noted that swelling of the veins accompanied the pain.

Of the 14 cases in which pain was not a symptom five were seen in my clinic, three in consultation and four in private practice. Eight of these 14 cases were in the pre-ataxic stage. Three of these developed ataxia without accession of pain. Six of the 14 of whom I am able to get information at the present writing have still not had pain. (Case III. is an excellent example of such a case.)

Crises.—Visceral crises were noted as having occurred in 20 of the 140 cases, *i.e.*, in 14 per cent. The viscera to which the attack was referred was as follows: Stomach, 11 cases; rectum, four cases; larynx, two cases; intestines, one case; larynx and pharynx, one case; stomach and intestines, one case. It is worthy of note that in six of these 20 cases the symptoms of gastric crises were the initial symptoms.

In one case which has been under constant observation for eight years, the patient has had but five severe attacks. The manifestations of tabes were ushered in by a profound attack of stomach and intestinal crises nine years ago. It is also worthy of note in view of the fact that it is widely believed that the tabic process is often arrested by blindness, that this patient has had two attacks since blindness became complete. In no case has crises occurred without pain.

Patients in whom gastric crises, or any other crises, for that matter, are the initial symptoms are rarely diagnosticated correctly until the disease has lasted for a considerable length of time. As a result they are infrequently subjected to treatment which, to say the least, can be of no benefit. To illustrate this the following case may be cited briefly: W. S., thirty-eight years old, infected with syphilis when twenty-three, sat down to eat his dinner one day when he was twenty-eight years old (*i. e.*, five years after his specific infection), experienced nausea, vomited a number of times and felt extremely ill. These attacks recurred every few days for about three months, during which period he was treated for stricture of the esophagus. He did not work for about two years after this attack because of loss of strength, easily induced fatigue and the occasional recurrence of the vomiting spells. At the present time he seeks relief for the following symptoms: Every morning at four o'clock he has a desire to go to stool, then he is taken with sharp pain in the abdomen, which is frequently followed by vomiting or by diarrhea. Inquiry reveals that he has occasional sharp, shooting pains in the region of the heart, difficulty on descending stairs, in walking in the dark, in standing at a basin and washing the face in the customary way, in starting the urinary stream and that he is impotent. Examination reveals ataxia of station and gait; absence of the Achilles jerks; absence of the knee-jerks, except the right, which can be brought out very feebly on reinforcement; unequal pupils, the left widely dilated, not responsive to light, the right dilated and responds very slightly; hypesthesia over both arms and to a lesser extent a narrow band across the fifth intercostal space; hyperesthesia over the abdomen and back. The plantar, cremaster and abdominal reflexes are present.

In other words, a typical case of tabes in which none of the customary symptoms was complained of until the patient was interrogated very closely.

Paresthesia.—Paresthesia is one of the commonest symptoms of tabes. It is nearly as constant as pain. Its occurrence was noted in 103 of my 140 cases, *i.e.*, in 73 per cent. v. Sarbo (*loc. cit.*) found paresthesia in 72 per cent. of 172 cases. When it is not mentioned in the histories it is reckoned that it did not exist. This may not be quite legitimate, for it may have been not noted in a number of instances in which it existed in a mild degree, because the patient did not speak of it and because he was not directly interrogated concerning it. Paresthesia is differently described by different patients, just as pain is. The commonest designation is "numbness;" "loss of feeling" (39 instances); "numbness and tingling;" "pins and needles;" "crawling sensation;" "cotton sensation;" "parchment sensation;" "a veil across the face" (48 instances); "sensation of cold, and of heat and burning;" sensation of being wrapped in something;" "tickling sensation;" "tight sensation in the lower part of the spine;" "sensation of the insides falling out or down;" "all-gone sensation in the seat;" "sensation as if walking on steel brushes" (37 instances). The distribution of the paresthesia was distributed as follows: Lower extremities, 46 cases; trunk and viscera, 16 cases; lower extremities and trunk, 18 cases; upper extremities, 13 cases; face and head, 10 cases.

Paresthesias are important symptoms in nearly every case. In some these are dominant, as in the following case: M. H., a Polish Jew, thirty-eight years old, contracted syphilis during his twenty-third year and received hospital treatment for about six weeks. When twenty-five years old there developed, nine days after taking a warm bath, intolerable itching of the surface of the entire body from the head to the toes and finger tips. This lasted about two months, sometimes better, sometimes worse, but it has never entirely disappeared. On being questioned closely he recalled that he had similar attacks in Russia as long ago as ten years before. These attacks were characterized by itching in one part of the body or another and a sensation of tension in the head, neck, face and eyes, as if these parts were being squeezed. Such an attack would last "an hour or so," and following them he would be very tired. He does not recall their frequency, but he thinks he did not have more than one or two a year. A few months after the onset of the attack for which he consulted me pain in the legs and toes developed. The pain was intermittent, lightning-like and came in attacks, each attack lasting a few hours. After an attack the paresthesia was more severe. Following a severe attack of pain he is dispirited, weak and listless.

There are no symptoms pointing to impairment of function of the sphincters or the sexual sphere. Examination shows *both Achilles jerks absent*, the left knee-jerk elicitable, the right not elicitable except on reinforcement and then only very sluggishly; ataxia of the right lower extremity; slight Rombergism; no ataxia of gait; no ataxia of the upper extremities; no distinct hypotonia. The pupils are equal and react to light and in accommodation. Examination of the sensory sphere shows areas of analgesia, irregular in distribution over the lower extremities and at the borders of these areas, hyperesthesia and hyperalgesia. When he sits on a cold surface, the naked skin in contact, he complains of great pain, burning in character until the cold surface gets warm. Marked hyperesthesia to cold all over the body. Two years later both knee-jerks were absent; he was beginning to show some ataxia in gait; the pupils were *unequal* and the left decidedly sluggish to light.

Among other things which the history of this case shows is the disappearance of the Achilles jerks before the knee-jerk, and the prolonged period that paresthesia and pain may be present before other symptoms of tabes. Similar cases are to be found in the literature (Goldflam, *Neurologisches Centralblatt*, 1902, p. 786).

Paresthesia in the domain of the fifth nerve is often most annoying, especially when it takes the conjunctival form, described by the patient as if there was "sand in the eyes." In two patients this has been most distressing. Paresthesia of the head, feeling of compression in the occiput principally was noted oftener in dispensary patients than in patients in private practice. The large proportion of Russian Jews in the dispensary cases and their tendency to disturbance of sensibility may account for this. In one instance (private patient) thermal paresthesia was extremely annoying. The patient complained of a sensation of great head and burning in the feet. To have his boots blacked while they were on his feet was most disagreeable and oftentimes gave rise to intolerable pain.

Girdle Sensation.—A sensation as though a girdle or band was around the lower portion of the trunk is usually considered to be a frequent symptom of tabes. In my cases the presence or absence of the girdle sensation was noted in 30 per cent of the cases. It is recorded as present in some degree in 46 cases, and as not present in 59. That is, it existed in 45 per cent. of the cases in which it is certain that specific inquiry was made. It is probable that most, if not all, of the remaining 35 patients were questioned upon this point and the answer being negative it was not recorded. If the percentage is computed for the entire series it would appear that about one-third of the patients had girdle sensation, an inconstancy of occurrence that does not entitle it to rank as one of the leading symptoms of tabes. The information on this point, furnished by my statistics, is not much at variance with that of other recent writers, and it may therefore be taken as representing approximately the value and importance of this symptom as an aid in diagnosis. As a matter of fact girdle sensation is one of the paresthesiæ of tabes, and is not entitled to consideration as a symptom apart from them.

Disturbance of Tactile Sensibility.—Objective sensory disturbances of one kind or another are the most constant accompaniments of tabes. They exist not only when the tabes is well developed, but in its early stages as well. They are not infrequently overlooked. It requires careful and systematic examination of the cutaneous surface of the entire body to detect them. Casual examination of the feet and legs, which unfortunately we often limit ourselves to, in searching for sensory disturbances, does not reveal them with anything like the frequency with which they really exist. I have been very much impressed with the truth of this, because in the 40 last cases carefully examined that have come under observation there has been found objective sensory disturbances, particularly of the trunk, in 24 of them, 60 per cent. I am sure that if all of the cases constituting this series had been examined with the same care that these last cases were the percentage of cases showing sensory disturbances would be greater than my statistics show it to be. Still I call attention to the fact that I have not found disturbance of tactile sensibility with anything like the frequency that some investigators have, not even the anesthesia of the trunk first described by Hitzig. For instance, it was found in 92 per cent. of the cases by Förster and Fränkel, 91 per cent. by Löhr, 85 per cent. by Patrick, 71 per cent. by Bonar, 40 per cent. by Williamson. These were the determinations of investigations undertaken especially to show the existence or absence of diminution of tactile sensibility of the trunk.

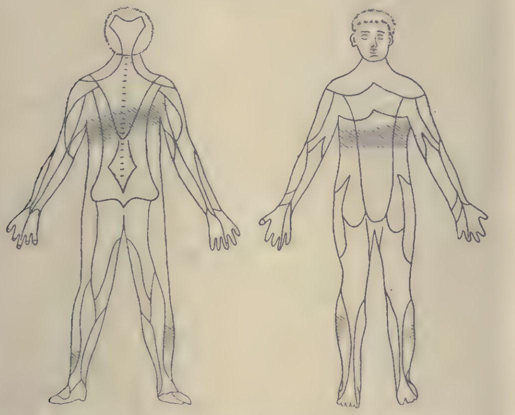
Disturbances of tactile sensibility, *i.e.*, anesthesia, hypesthesia and hyperesthesia were found in the trunk alone in 26 instances, in the trunk and lower and upper extremities in 61 instances, in the trunk, lower and upper extremities and face in seven instances. In other words, disturbance of tactile sensibility was noted in 67 per cent. of the cases. This seemingly large percentage of cases may be accounted for by the fact that examinations were made carefully, and that it had been impressed upon the examiner many times that areas of hypesthesia, slight diminution of tactile sensibility detected in the early stages of tabes, become transformed later into two distinct areas of anesthesia. In two cases the anesthesia involved the face, gums, teeth and tongue. It is worthy of note that in both instances the patients had previously complained of distressing paresthesia in the same regions.

Anesthesia of the legs was noted in 54 cases. In 39 cases the absence of anesthesia in the lower extremities was noted. In 47 cases the findings of examination for tactile sensibility are not recorded. Estimating the percentage of disturbance of tactile sensibility in these 93 cases we find it to be 58 per cent.

It may therefore be said that diminution of tactile sensibility is an early and rather constant objective sign of the tabes. Casual examination for sensory disturbances will not, however, reveal it. In every case the trunk and the extremities should be examined carefully by means of a camel's-hair brush, a bit of cotton wool, or of the finger which has previously been plunged into hot water so as to deprive it of surface coldness, if necessary.

The commonest distribution of tactile disturbance in the beginning of the disease is to the trunk, the area corresponding to the fourth to sixth dorsal segments. The anesthesia may be extremely slight in early tabes but it usually intensifies and extends as the disease advances. The lower extremities, however, show this form of sensory disturbance nearly if not quite as often as the trunk, and in the latter stages of the disease hypesthesia or anesthesia of the legs is almost invariably found. Lessened keenness of tactile sensibility has little or no relationship to the duration of the disease, but intensity of disturbance has. Disordered tactile sensibility is quite as likely to be present early in the disease as it is later, but it is rarely intense, while when the disease is advanced it is quite likely to be so. It is well known that one of the distinguishing features of the disturbance of tactile sensibility in tabes is that it is "segmental" in distribution, *i.e.*, it conforms in its delineation to the sensory distribution of segments of the spinal cord, *i.e.*, of spinal nerve roots, and not to the distribution of peripheral nerves.

Fig. 3.



Parallel lines indicate area of tactile anesthesia case of early tabes.

(To be Continued.)

MEDICAL PROGRESS.

OBSTETRICS AND GYNECOLOGY.

Hysterectomy for Fibroids.—The operative records of 50 cases of abdominal hysterectomy for fibroids is given by C. J. POND (Lancet, Jan. 17, 1903), from which he draws the following deductions: The position as to operation depends on the danger to life and the degree of displacement, of ill-health and of suffering caused by the disease. The social condition of the patient is a factor. Comfortable invalid life is incompatible with poverty; therefore, the disease must be removed among the poor, in order to return them to working capacity. Among the more wealthy classes, moral, mental and physical degeneration follow long-continued invalidism, which would be good grounds for operation, when other conditions permit. Whenever the disease causes displacement, hemorrhage, pain and pressure sufficiently severe to threaten damage to the general health, to the nervous system, to the pelvic organs, the operation should be advised. Cervical hysterectomy has a lower mortality (about 4 per cent.) and is preferable to ovariotomy in this particular. The uterus may safely be impacted at this level, and the absence of recurrence in the error is an argument for this form as against panhysterectomy. In the former the pelvic floor is left intact; in the latter it is damaged. Myomectomy is a valuable operation, and applicable for certain accessible tumors. In all possible cases, one or both ovaries should be left in and not removed. Convalescence is more complete, and the patient has no artificial menopause.

Congenital Hernia of Liver into the Umbilical Cord.—This rare and interesting condition was observed by J. W. BULLARD (West. Med. Rev., Jan. 15, 1903), in a child whose mother gave an indefinite history of syphilitic lesions, with one miscarriage and four living children. In the tissues of the cord was a pinkish, semisolid tumor about the size and shape of a hen's egg, and attached at the umbilicus by its smaller end. There was no impulse transmitted to the tumor when the child cried. The baby was small and weak, so nothing radical was done, and in the course of a week the coverings of the cord underwent their usual desiccation. On the twelfth day operation was attempted, and it was found that the tumor constituted about half of the liver, and was so firmly adherent to the hernial sac that it could not be replaced. The child died in twenty hours.

Tears Through the Vagina During Labor.—A most remarkable case is reported by BAUMBACH (Deut. med. Woch., Jan. 8, 1903), of a woman who, in three successive labors, sustained tears in the vagina which allowed the fetus to be expelled into the peritoneal cavity and made a complete recovery every time. Patient was a small, weak woman, with marked kyphoscoliosis and an anchylosed right hip-joint. She had six previous pregnancies, once twin, all normal. At the seventh labor one child was born without assistance, and a second diagnosed as present. After a strong pain the woman suddenly fainted and the uterine contractions stopped. Several hours later the uterus was tightly contracted. Several coils of gut were found in the vagina, protruding from a tear in the posterior cul-de-sac. The child was then made out in the abdominal cavity, with the fetal membranes intact. The latter were ruptured, a foot pulled and the fetus readily extracted. A quantity of gauze packing was introduced and the woman made a good recovery. Two years later she was again pregnant, and went into labor with the child in the transverse position. The same collapse took place, and examination again disclosed the fetus in the abdominal cavity from which it was readily extracted. A year and a half later the phenomenon was repeated with equally good results, the fetus in every case having survived and the patient making an excellent recovery.

Puerperal Eclampsia.—The causative factor in this malady has as yet eluded every effort at discovery. EDWARD T. ABRAMS, (Am. Jour. of Obstet., January, 1903), states that it is now conceded that the eclamptic symptoms are dependent upon some form of autointoxication, and it seems quite certain that this condition is brought about, at least in the first instance, by insufficient metabolism and subsequently by insufficient secretion. The condition is so rare that only those of large clinical experience can see many cases. It is most common from the seventh to the ninth months. The relation of the thyroid to eclampsia is very interesting. An enlargement of this gland takes place in primipara about the sixth month, and in multiapara about the fifth. The function of the thyroid is to regulate metabolism. Lange has demonstrated the enlargement is physical, or rather physiological. In twenty out of twenty-five cases of pregnancy, in which enlargement of the gland did not take place, albuminuria and convulsions did develop. Herzfeld holds that pressure on the ureters is an etiological factor in the causation of the disease. In his 81 fatal cases, all showed pathological changes in the uropoietic tract. The effort to prove that eclampsia is identical with uremia, has gone down as "not proved." However, it is the incomplete urea in the blood that (in the form of toxins) doubtless causes the convulsions. Therefore the diminution of the urea in the urine ought to be to us an indication that the toxins are being retained. The urinary tract must not alone be watched, but the other organs should receive their quota of our attention. Jaundice is always a very grave symptom. It is a good rule to consider every pregnant woman constipated until otherwise proved by a competent nurse. The experiments of Tarnier, Ludwig and Savor certainly show that the toxicity of the blood serum is increased in eclampsia, while, on the other hand those of Charrin and Volhard seem to prove just as conclusively that it is not. In treatment, prophylaxis stands preeminent. When the trouble has developed the treatment may be summed up in one word, "elimination," and nothing will give such immediate results as blood letting, followed by infusion or transfusion of saline solution. If the patient be anemic, do not bleed, but use the saline injection. The results of such treatment observed to the effect that: (1) The patient's general condition will improve; (2) the cyanosis, muscular twitching and rigidity will have ceased; (3) the pulse, which before was hard and bounding, will have lost its tenseness, and the attendant coma, be it ever so deep, will slowly but surely be lifted. The writer says in conclusion, that if blood letting, together with saline infusion or transfusion, were more generally employed, better results would be obtained in the treatment.

Removal of Vesical Papilloma.—A new and interesting operation through the septum, with the patient in the knee-chest position, is advanced by HOWARD A. KELLY (Am. Jour. of Obstet., January, 1903). According to the author an artificial anemia is established with the patient in this position and whatever blood escapes runs down into the bladder, and in no way obscures the field of operation. The patient is anesthetized and put in the knee-chest position. Air is then let into the empty bladder, when an anterior-posterior incision is made in the median line about five centimeters long, by plunging a curved knife through the septum. The edges of the incision are drawn apart, after which the tumor is grasped and drawn into the vagina with the adjacent bladder wall. The pedicle which was present in the author's case, was transfixed well away from the tumor in the vesical wall, and tied both ways. A silk suture was used. The vaginal wound is then closed with fine silver wire sutures through the entire thickness down to the vesical mucosa, leaving a small opening to drain the bladder for a few days, to drain any coexistent infection. For this a mushroom catheter is used. This is removed after eight or ten days and the wound closes spontaneously. When the wound has closed, the patient is put in the knee-chest position and the silk suture removed through a No. 10 speculum. The method of operating in the knee-chest position has a wide range of applicability in bladder work, being well adapted for the removal of vesical tumors. The distended bladder in this position is far less vascular than in any other position. What blood escapes falls into the vertex and does not obscure the field of operation. The cut bladder wall is much thinner than in the contracted state. The vesical walls can be everted into the bladder to a remarkable degree; after pulling the tumor and the adjacent mucosa, the patient can then be put in the side posture to lessen the traction necessary to hold the mass, and the operation so completed. The bladder wall can be sutured after resection most securely in this way. Lastly, the easy removal of the stitch through the speculum makes it possible to use silk or even fine silver wire ligatures and sutures in the bladder in supra- and infrapubic operations with the expectation of taking the sutures out in this way at a later date.

The Mechanism of Posterior Presentation.—The variations in the form of the mechanism are dependent upon the size of the pelvis and upon the size and degree of flexion of the child's head. The greatest complexity manifests itself at the brim. SIGMAR STARK (Am. Jour. of Obstet., January, 1903), believes that there are four forms of mechanism encountered at the brim: (1) The entrance of the occiput in the "diameter of favorable engagement" with the head in the state of excessive flexion; (2) arrest of the occiput, descent of the sinciput, release of the occiput with reestablishment of flexion; (3) arrest of the occiput, descent of the sinciput, and conversion into a face presentation; (4) arrest of the occiput, descent of the sinciput, impaction and arrest of labor. When the occiput reaches the pelvic floor, and often even earlier the next phenomenon in the mechanism of labor becomes manifest. The occiput rotates either anteriorly or posteriorly. The requisites for anterior rotation are good pains flexion, and a relatively rigid pelvic floor. If the head be in a position of extension, the sinciput rotates anteriorly according to the law of obstetrics, that the most dependent rotates to the front. Good pains and a relatively rigid floor are essential in order to establish the proper balance between the forces of expulsion and resistance. In every case of labor in an occipito-anterior position when the occiput gets locked beneath the arch of the pubis, the following take place: The chin, being the only portion free to move, leaves the breast of the child and the head extends; the occiput is arrested; it can advance no further; it can rotate neither forward or backward; and finally the chin, as the only part of the head free to move, leaves the breast of the child and the head extends, and labor terminates as a face presentation. The occipitomental diameter of the head is five inches, the oblique diameter is six inches; hence the extension of the head is entirely impossible. Probably this form of mechanism may occur, but the author cannot conceive that it is possible unless the head is undersized or easily molded.

The White Blood Cells During Pregnancy.—Childbirth and the puerperium cytodiagnosis and cytoprognosis after examination of the blood have assumed such vast importance that any light upon these subjects during important processes is valuable. The following points are offered by C. HAHL (Arch. f. Gyn., 1902, B. 67, H. 3): (1) During the last days of pregnancy the white blood cells are somewhat increased in number; (2) with the onset of the birth-pains, a rather marked hyperleucocytosis sets in; (3) this hyperleucocytosis is interesting chiefly in the polynuclear neutrophile cells; (4) during the puerperium this hyperleucocytosis is by regular stages decreased, so that as a rule during the first week the return to the normal relations within the blood is complete.

Pregnancy in Women Less Than Sixteen Years Old.—The question as to what age is the most proper for conception in mankind has been disputed for centuries, the two sides being summed up in the questions of social and bodily propriety. A. PATILLIE (C'blatt. f. Gyn., Dec. 27, 1902), after collecting together a large number of recorded cases in literature, formulates the following conclusions in the matter: (1) The course of pregnancy itself in women less than sixteen years old is normal, rarely ends in an abortion, but usually terminates in birth a little ahead of time; (2) the actual labor, has, on account of its short duration in such women, much less real suffering; (3) the necessity for operating in any way during such confinements need hardly be taken into consideration; (4) the prognosis with reference to damage to the birth canal in any of its parts is an exceedingly good one; (5) the puerperium is not in any way a departure from the normal; (6) for the fruit of the conception every possible prospect of the prognosis is good. The possibility of determining the youngest age at which a woman should conceive seems to be limited mostly by the dictates of nature, which has determined that the girl becomes a woman and capable of childbirth at about this age, which is, in fact, the time of life when her body is so arranged as to suffer least of all some of the evil consequences of childbirth.

Diagnosis of Tubal Abortion.—A contribution to the early diagnosis of hematosalpinx due to tubal abortion, is made by E. VIGNARD (Gaz. Méd., Nantes, Jan. 3, 1903), who reports twelve cases seen within a year. He holds that a diagnosis may almost invariably be made before rupture of the tube and hemorrhage into the peritoneal cavity have occurred, from the three cardinal symptoms, retarded menstruation, pain and uterine hemorrhage. Taking up these symptoms singly, he states that retarded menstruation is the rule, and the patient should be very carefully questioned concerning this, when it will be generally found that if there has not been a temporary cessation of menstruation, some modification of the last menstrual pediod will be discovered; the menses having been scant, abruptly checked or otherwise changed. Pain is the symptom for which the physician is called, and offers certain well-marked characteristics. It is always present, comes on suddenly like a colic, may be located in the lower part of the abdomen or over the entire abdomen, but its point of departure and of maximum intensity is in the region of the adnexa, upon the right or left side; and it is always unilateral. Its severity is variable and duration short, rarely lasting more than a few hours. It may be repeated in the following days and is sometimes accompanied with vomiting. Simultaneously with the occurrence of pain, there is a flow of blood from the vagina which is small in amount, so much so that it may not at once be noticed by the patient; but it is of long duration; sometimes continuing for weeks. These three symptoms should, in the author's opinion, at once suggest the diagnosis, which receives confirmation upon palpation through demonstration of the large, unilateral salpingian tumor; this being but slightly sensitive to pressure, save during the crises. The differential diagnosis of tubal abortion from nephritic colic, appendicitis and uterine abortion, the author gives as follows: In the first and second, menstruation is not retarded, and there is no flow of blood. In the last, with which tubal abortion is most frequently confounded, the discovery, by palpation, of the lateral tumor, clears up the diagnosis.

Putrefaction in the Lungs of Fetuses Without Respiration.—An added doubt is cast upon the dictum the lungs float, therefore respiration has taken place, by the experimental work of J. E. CLARK (Rev. de la Assoc. Méd.—Far. de la Isle de Cuba, No. 1, 1902), which seems to point to the possibility that putrefaction might take place in the lungs of fetuses which had not breathed, and that the gases so generated would be sufficient to cause the lungs to float upon water when removed from the body. The author procured the lungs of fourteen fetuses in whom it was positively known that respiration had not occurred, placed them in water, and, finding that they did not float, placed each pair in a vessel from which all air was withdrawn. The vessels were of uniform size, contained an equal amount of water, were hermetically sealed and kept at a uniform temperature. That putrefaction took place, despite the absence of air, seems evident from the fact that gaseous vesicles were seen upon the surface of four of the lungs, and nine floated to the surface after a variable length of time. Five did not come to the surface at any time, and in several instances, one lung floated to the top and the other remained at the bottom. The author suggests that in those instances in which the lung failed to float, there may have been some condition which rendered the lung-tissue more dense than the water.

Fibroids and Heart Disease.—Bleeding uterine fibroids may cause more or less acute anemia, but hemorrhage, as Brosin has shown, does not necessarily cause heart disease. In bleeding cancers it was found that the heart often remained remarkably strong. In any case of fibroid with cardiac symptoms, we must make allowance for, possibly, coincident heart disease, for medication, and also for bulkiness of the tumor embarrassing the circulation. Pressure on the ureters may indirectly affect the heart by causing renal disease. ALBAN DORAN (Brit. Jour. of Obstet., Jan., 1903), states that deaths which may occur suddenly after the removal of a fibroid of large proportions have occasionally been traced on post-mortem evidence to cardiac degeneration. It is known that the heart may fail on occasion, following the removal of any large tumor. To counteract the danger of heart failure sparteine answers in some cases where the kidneys are involved, but strychnine is universally acknowledged to be the best drug for this purpose. This latter, however is useless, if sepsis establishes itself. The practical value of considering the heart in relation to fibroids and hysterectomy, is that we are often called upon to distinguish shock, both from hemorrhage and sepsis. The author does think that it is well to attribute all bad pulse conditions to heart disease due to fibroids. After the removal of a large tumor a patient may have palpitations. Circulatory troubles are certainly observed in cases of fibroids where only moderate hemorrhagia or no bleeding at all exists. Syncope during the period (which was free though never severe) occurred in a case where the author removed a fibroid uterus. Pain must be taken into account as well as free bleeding when the patient with fibrods has fainting fits during the period. It has been the author's experience that irregular pulses and attacks of syncope do not in themselves contraindicate operation, indeed, the patient is all the better for the removal of the tumor. Other forms of heart disease may complicate fibroids. The common valvular changes when compensation has failed, do not entail much extra danger, and the removal of a bulky fibroid, proves rather beneficial under the circumstances. On the other hand, chronic Bright's disease with dilated heart, greatly increases the risk of hysterectomy.

Carcinoma of the Cervix, Together with a Seven Months' Pregnancy.—A most interesting case of this description was treated by Cesarean section and extirpation of the uterus and the pelvic lymphatic glands by E. T. THRING (Brit. Jour. of Obstet., Jan., 1903). The child was viable and the disease had not advanced so far as to prevent the possibility of a radical operation with the hope of no recurrence. The operation is more severe on the patient than the vaginal one, but gives a better outlook for the future as far as a cure is concerned. The mortality in experienced hands, is but little greater than that of the vaginal one, provided only suitable cases are operated upon. Where the tissues beyond the pelvic lymphatic glands are infiltrated, and especially those around the ureters, the cases are unfit for the performance of a radical operation, with any hope of remote success. Other methods should be adopted. It would, the author thinks, be justifiable to remove a portion of the bladder if it were involved or doubtful. The principle of radical operation for cancer (and by that is meant not only the removal of the whole growth, and, if possible, the organ involved, but also the efferent lymphatics, and the nearest lymphatic glands which act as filters) is established, and will hold its ground until perhaps, the presence of a special cancer organism is demonstrated, and possibly in the future we may have an efficient serum treatment for cancer. For the present, however, we have to extirpate as widely and thoroughly as possible.

The Etiology of Dysmenorrhea.—Some cases of menstrual pain are cured by dilatation of the cervix, and others are not. It is plain that the former cases have at least one feature in common. The latter may be of the most diverse kind. Although this disease is most common, say G. E. HERMAN and H. R. ANDREWS (Brit. Jour. of Obstet., Jan., 1903) few text-book authors consider it of sufficient while to treat of it in their books. One theoretical statement as to the causation of dysmenorrhea, given by so many writers is that the uterus is anteflexed. Anteflexion is present in precisely the same proportion of women who menstruate without pain as in those women who have straight uteri. Sir J. Williams has reached the conclusion that the uterus is imperfectly developed, but that this does not retard the onset of menstruation. Primary, or dysmenorrhea, which starts with the onset of the puberty, is more likely to be cured by dilatation than that which is acquired. Especially is this true where the pain begins before the twenty-fifth year. Menstrual pain may be acquired at almost any time during the first half of menstrual life. The pain of menstruation may be of two kinds—general aching due to congestion of the pelvic organs which precedes menstruation, which is relieved by bleeding from the uterus, and the sharp uterine colic. The former is not relieved by dilatation, the latter is often cured by it. The pain of pelvic congestion not only begins earlier, but lasts longer than that of uterine spasm. Spasmodic pain does not permit the patient to lie down; pelvic congestion is relieved by quiet recumbrance. Spasmodic pain is severe and usually accompanied by nausea and vomiting. In most cases of dysmenorrhea there is no sign of organic disease of the uterus. The most obvious explanation of the cure of the menstrual pain by dilatation of the cervical canal is that the pain is caused by the narrowness of the canal. The cervical canal of a young multipara has never been seen so narrow as to prevent the flow of the menstrual blood. Such stenosis only exists in diagrams. The writers have come to the conclusion that the narrowness of the cervical canal is most often sufficient to account for a condition underlying and perhaps, causing the spasmodic dysmenorrhea, acting not by causing mechanical obstruction, but by preventing physiological dilatation. The treatment of these patients consists in the dilatation of the cervical canal by bougies.

Urethral Caruncle.—The results of considerable study concerning this painful malady are offered by M. LONGER (Zeitschr. f. Gerburtsh. u. Gyn., 1902, B. 48, H. L.) in the following terms: Caruncles in the female urethra are not true angiomata, but neoplasms of the mucous membrane, similar to granulations or hypervascular papillæ or polypi of the mucous membrane or telangiectatic type. Caruncles are distinguished from each of these three types of tumor not only by the structure, but also from tumors in this same region of the body by the constant presence of glands which frequently, through septic degeneration or interglandular bleeding or round-celled infiltration, are considerably altered. They are distinguished from the prolapse of the urethra not only by the microscopical condition, but also by the fact that on the surface they never have cylindrical or transitional epithelioma. The frequency of caruncles in adults is probably the same at any given age, but after fifty, they usually take the form of papillary polypi. Previous to the 40th year, one finds more frequently papilloma and telangiectatic polypi. As a cause, caruncles exist most frequently after the granulations, and the various atrophic changes due to age act on the polypi of the mucous membrane. For a very large number of cases, no direct cause may be assigned. The number of births appear to play no part in the origin of caruncles. The symptoms are usually due to a complicating chronic urethritis or to accompanying prolapse of the urethral mucous membrane.

Treatment of the After-coming Head.—The methods which have been devised for treating this condition are numerous, but the only two in practical use at present are the Smellie-Veit and the Martin. STEFFECK of Berlin (Deut. med. Woch., Jan. 15, 1903) thinks that the results, especially as regards the mortality of the child show the need of improvement. Trauma and asphyxia are not uncommon and their cause is traceable to the manipulations preceding the extraction of the head. He believes that the artificial introduction of the head into the pelvis is unnecessary, as a compressible body assumes of its own accord the shape and form best adapted to its passage through a narrow opening. The introduction of the finger of the operator into the child's mouth moreover is usually productive of premature respirations. The method advocated has been used with good results by the author in over 30 cases. He does not engage the head by traction on the child's body, but, as soon as the arms are free, he places both hands on the mother's abdomen, finds the fetal head and presses it downward and backward. This must be done slowly and at short intervals, the patient lying across and over the edge of the bed and the operator standing between her legs. The child is left to hang free. As soon as the head has fully entered the pelvis the Smellie-Veit method may be used to complete the procedure.

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HIP JOINTS AT HOME AND ABROAD.

SOME fifty-years ago, when Sayre had done more than forty cases of excision of the head of the femur, he said that although there seemed a bright outlook for the operation, its period of usefulness would be short. His prophetic eye saw into the future with a clearness that was characteristic of the man. Whereas thirty years ago excision of the hip was a common operation in this city, relatively speaking, to-day it is equally rare.

Even in staid surgery fashions come and fashions go. In 1846, just about the time that Sayre was beginning his series, Pancoast wrote "notwithstanding the common fatality attending the ordinary treatment of coxalgia *with caries of the head of the bone,* there seems as yet little or no reason to believe that the chances of the patient would be improved by resorting to so severe an operation . . . the patients in the greater number of cases dying in consequence of the extension of the caries, the violence of the consecutive inflammation, or of the exhaustion produced from excessive suppuration." History repeats itself. In 1903 we read, Bradford and Lovett, "The risk from death arising from general tuberculosis and tuberculous meningitis in cases of hip diseases treated conservatively, is very small: about six per cent. After operation, on the other hand, in addition to the small mortality from the direct shock of this operation there arises a death rate, according to some authors, of almost fifty per cent. from secondary tuberculous involvement. The hope of immunity from tuberculous infection has not been gained by resection."

Apparently we have passed the milestone; we are now sufficiently advanced, in this country, to recognize coxitis in its early stages, to give it suitable protection that time may work the cure; Sayre's prophecy has been fulfilled.

So much for ourselves and our attitude toward this disease. How about the rest of the world? It is then with a feeling more akin to pity than anger that we scan the pages of a voluminous article in a recent number of the *Zeitschrift für Chirurgie,* and struggle through histories of forty-four resections! The author evidently feels that he has entered an untrodden field, and the general trend of the article is cut! cut!! cut!!! Cut the child from the hip, as though the disease were malignant; dynamite out the acetabulum, if need be; hoe out the shaft of the femur and epiphysis if necessary—it's a sort of "ad majorem Dei gloriam" job to be relished by all. This odd man admits a mortality in pus-free cases of 16.5 per cent. and 48.8 per cent. in that vast majority where it is present. How anyone not the victim of fixed delusions can urge these monstrous figures on the public passes wonder! Here, however, is the explanation—read his wretched bibliography—out of a total of fifty authors cited from only ONE writes in English, and he is well known to be a rabid advocate of excision. It may be well for the German surgeon to pause before he further decimates and maims the young generation, to read what we can tell him. Despite the greatness of the empire these children *might* be useful.

NEPHRECTOMY FOR MALIGNANT TUMOR.

NEPHRECTOMY for malignant tumor is not one of those life-saving operations which the surgeon can undertake with an easy confidence born of success, and which tend to create in the lay mind an attitude of respect for modern surgical skill and power. Its successes are relatively few, yet a study of the published results reveals two comforting facts, namely, a gradual diminution in the percentage of deaths occurring during operation, and an increasing percentage of cures.

The statistics of nephrectomy in cases of malignant tumor have been collected and published in succession by Guillet (1888), Siegrist (1889), Chevallier (1891), Küster (1897), Albarran and Imbert (1902). Prof. Forgue in a recent report to the Association Française d'Urologie, joined to a study of these statistics an analysis of the results of nephrectomy in the services of Czerny, Krönlein, König, Trendelenburg, Riedel, Israel, Albarran and Tuffier. The inferences drawn from these studies are that nephrectomy in cases of malignant tumor gives better results to-day than in the earlier days of the operation because rigorous asepsis has been substituted for antisepsis (the latter involving the use of toxic agents which damaged the remaining kidney), because the operative technic has improved, and because futile operations on tumors too adherent are no longer undertaken.

Assuming that the term cure should only be used in cases in which the patient lives at least four years after the operation, Forgue finds that in 400 cases of nephrectomy for malignant tumor 28 cures were effected. Against these 28 cures must be counted the large number of cases in which operation is followed by a rapid extension of the malignant growth, and furthermore, the fact that tumors of the kidney, left to themselves, often pursue a slow course. The beneficent possibilities of nephrectomy will not fully be realized until, to the improvements already noted, there shall have been added an improvement in diagnosis, for it is to this that renal surgery must henceforth look for the opportunity to perform timely operations and to effect a larger proportion of cures.

Hematuria is the signal symptom in renal tumor. If it co-exist with a palpable growth, the diagnosis is relatively simple. At times a renal tumor develops insidiously, painlessly, without hematuria, and is first recognized when it becomes palpable or visible below the free border of the ribs; in such cases the prognosis is not favorable, because it is probable that the visible or palpable mobile growth represents but a fraction of the whole, while the great bulk of the neoplasm occupies the sub-diaphragmatic vault and is surrounded by adhesions. If hematuria be present and no tumor can be felt, the diagnostic difficulty is great; but the cases diagnosed under these conditions are precisely the ones which offer the greatest reward to surgical intervention. Hematuria, therefore, is never to be regarded lightly; its source should be established as speedily as possible, and if the hypothesis of renal neoplasm can be reasonably established, there should be no hesitancy in resorting to lumbar incision and renal exploration after determining, by vesical segregation or ureteral catheterization, from which side the hemorrhage proceeds. Contraindication to operation are massive adhesions to perirenal tissues, extended involvement of lymphatic nodes, presence of metastatic growths, bilateral renal cancer, insufficiency of the kidney not involved in the malignant growth, and the usual contraindications to any grave operation, based upon the general state of the patient or the condition of vital organs.

SPRING CLEANING.

It is commonly believed among good housewives that the first week in March is a fitting time to anticipate the possible arrival of certain migratory pests. The traditional house-cleaning fever that stirs the blood of these worthy dames about the time that the sap begins to run has made itself felt with us, and we present to our readers this week some sage advice concerning preventive measures to avoid malaria by the extermination of mosquitoes.

The men who have contributed to our mosquito-malaria symposium advocate a thorough cleaning up of all breeding places of mosquitoes and a disposal of garbage and an utter routing of empty cans and barrels and anything that might hold water; in short, they advise, if we would avoid malaria, a very much neater and tidier way of living than the city had ever deemed necessary, especially in the poor suburban districts.

The Board of Health is doing its part in the propaganda and the real estate agent is deciding how much he can spend on kerosene and drainage to boom his lots, but the physician is the one who can do more to infuse the general spirit of spring cleaning into the community than any other man. As a topic of general conversation he should introduce the subject of mosquitoes and malaria wherever he goes. It is a light and easy matter to approach, being available through the introduction of summer vacations, suburban residences, and the never-failing topic of the New York Tunnel; but he should never leave it lightly, for he has the power to impart knowledge and to create a sentiment that will make a vast difference in the health and wealth of American citizens.

It is strange that with all our empirical knowledge of malaria, the dangers of being out after dark on summer nights, of living near marshes, or newly broken ground, of sleeping out of doors, that we should never have suspected that the teasing mosquito, omnipresent under such conditions, should be the cause of the greater trouble.

We are not so clever as we have commonly supposed ourselves to be. Indeed, a hill tribe of Africans showed more wit in their limited observations than scientists from Aristotle down. They noted that when they went down to the plains they were bitten by mosquitoes which they called *Mbu*, and with the bites came the sickness which they also called *Mbu*, the sickness being no other than malaria.

Now that the marvelous relation of the malarial plasmodium to its winged host is worked out, we hope that the American people will take upon themselves regularly the spring-time task of cleaning up their mosquito-breeding lands.

THE PROPOSED PSYCHOPATHIC HOSPITAL.

It is to be hoped that the bill now pending in the legislature of this State, appropriating $300,000 for a new hospital for the insane, will meet with the approval of that body. The measure presented by the State Commission in Lunacy provides for the erection of a suitable building where patients may be cared for until examination proves or disproves the soundness of their mental condition.

Strange to say, with 24,000 persons adjudged insane in the State of New York, there has never been a place especially provided where suspects might be kept under restraint until such time as removal to Ward's Island, or other institution, became necessary. In this city the wards of Bellevue Hospital have in part served such purpose, but conditions there are becoming quite inadequate to cope with the increasing number of cases.

A properly fitted institution would furnish very suitable and efficient means for the isolation of diseases of the mind and nervous system, and would offer to recent graduates in medicine an opportunity to study the same, which practice could be gained in no other place.

With the tremendous effort the people of this country are making to keep pace with growing activity in business, and with the increasing struggle for existence, there seems to be good reason for supposing that insanity is on the increase, and therefore demands our best effort in its amelioration. The prosecution of such an object, however, can scarcely be carried on unless the work of the physician be supplemented by the setting apart of public money, according to the plan outlined in the proposed legislation.

ECHOES AND NEWS.

NEW YORK.

Columbus Hospital, New York.—The following appointments were made at the meeting of the Medical Board of the Columbus Hospital held on February 2. Dr. Frank Farquhar Ferguson was transferred from visiting to consulting physician to the hospital; Dr. Frederick C. Keller, Assistant Attending Physician, was appointed Attending Physician, and Dr. Henry Hazen was appointed Attending Physician in Children's Diseases.

Columbia Appointments and Changes.—The trustees of Columbia University decided yesterday to place the new department of physical education under the administration of one department, of which Prof. Thomas D. Wood is to be the head, with a seat in the faculty of Teachers' College. The university gymnasium will be in charge after July 1 of Dr. George L. Meylan of Boston as adjunct professor of physical education. The office of Medical Visitor was created, and Dr. D. S. D. Jessup of No. 305 West Eightieth Street, a member of the staff of instruction at the University Medical School, was appointed to it. Dr. George L. Peabody, Professor of Materia Medica and Therapeutics resigned, to take effect at the close of the academic year. Dr. Livingston Farrand, Adjunct Professor of Psychology, was made Professor of Anthropology; Charles A. Strong was appointed Professor of Psychology.

Polyclinic Appointments.—At a recent meeting of the Faculty of the N. Y. Polyclinic Medical School and Hospital, Dr. Charles Gilmore Kerley was elected Professor of Pediatrics, and Dr. J. A. Bodine, Professor of Surgery.

The Situation at Ithaca.—A recent election on the question of municipal control of the waterworks of Ithaca resulted in an overwhelming victory for city ownership, there being 1,335 votes in the affirmative and only 30 in the negative. It is estimated to-day that there are in Ithaca six hundred persons who are suffering with typhoid fever, and probably two hundred others elsewhere who have contracted the disease here. Nineteen Cornell students have so far died of typhoid fever, of whom eighteen were male students. This is almost one per cent. of the male students in Cornell. The condition of the patients in the Cornell infirmary is reported to be better than on any day since the epidemic began. The Health Board of Ithaca has inaugurated a system of district nursing of the ill.

Appointment of Drs. Thatcher and Bovaird.—Dr. D. Bovaird has been appointed Assistant Visiting Physician to Presbyterian Hospital. Dr. J. B. Thatcher taking the visiting appointment made vacant by the retirement of Dr. A. H. Smith.

Nurses Desert a Hospital.—Failing in their efforts to have their new superintendent removed, the expert trained nurses of the New York Eye and Ear Infirmary left the institution in a body last Monday.

Summer Course College of Physicians and Surgeons.—Columbia University will establish in the summer of 1903 an extensive series of courses in medicine for men for the benefit of practising physicians who desire opportunities for additional study and investigation, as well as for that of properly qualified students of medicine and surgery. The instruction in each course will be thoroughly practical in character, and the number of students to be accepted in any given course will be strictly limited in order that each one may gain the fullest possible benefit.

Instruction will begin on Monday, June 1, (with the exception of one course in obstetrics, beginning May 11), and continue until Monday, August 24. The several courses will vary from three to six weeks in length. Students will be registered for any given course or courses in the order of their application, in case the application is accompanied by one-half the amount of the proper fee. Before May 1, 1903, any application may be withdrawn, in which case the advance payment will be returned. After May 1, 1903, advance payments made by those for whom places have been reserved, will not be returned in any case. Practising physicians may register for any course or courses that they select. Students of medicine will only be permitted to register for those courses which their standing in the College of Physicians and Surgeons, or in some other medical school of equivalent rank, would permit them to take. Regular students in the College of Physicians and Surgeons, who, being eligible to enter any practical course or courses offered at the Summer Session, satisfactorily complete such course or courses, will be exempted from attendance upon equivalent courses given during the regular academic year. These summer courses will be Neurology, Gynecology, Ophthalmology, Dermatology, General Medicine, Pediatrics, Diseases of Stomach and Intestines, Genito-Urinary Diseases, Otology, Obstetrics, and Laryngology.

PHILADELPHIA.

Dr. S. Weir Mitchell Dined by University Club.—The Board of Governors of the University Club tendered a reception and dinner to Dr. S. Weir Mitchell on Friday evening, February 27. The following is quoted from a brief speech made during the evening by Dr. Mitchell: "Perhaps I am better known to you by my literary work than by my works of science. I will say, however, that if I should be by necessity compelled to give up any branch of my work I would discard the literary work. I would rather be known for what I have done in my profession, medicine, than by my writings."

College of Physicians Fund Raised.—It is announced that the $50,000 necessary to secure a like amount from Andrew Carnegie has been secured by the College of Physicians of Philadelphia. It has not yet been finally decided whether the contemplated improvement will consist in making higher the old building or in purchasing a new site and erecting a building thereon. The latter project will probably require an additional $100,000.

Use of the Widal Test Requested.—The prevailing epidemic of typhoid fever is given as the reason by the health authorities for sending out a circular asking physicians to use the Widal test to facilitate diagnosis of that disease. The test is made by the city free of charge. The request is made not only to aid in diagnosis but to assist the department in gathering correct statistics relative to disease.

Sand Filtration Has Proven Successful.—The five beds at the Lower Roxborough filter station of the city water supply have been running continuously during the past three weeks, and according to Engineer Hill have more than met expectations regarding them. It has been contended that the system would not operate when the thermometer ranged between 2 and 20 degrees above zero. During the three weeks' test the temperature went at different times as low as two degrees above, yet at no time was there difficulty regarding the delivery of water from any of the five beds. Results as to turbidity and bacteria were very satisfactory.

City Officials Enjoined from Purchasing Vaccine Privately.—One of the most important suits involving the subject of vaccination was begun in Court of Common Pleas No. 1 recently by counsel for Jacob Damback. The suit is an equity proceeding against the municipal authorities, the respondents being Director English, Chief Good, of the Board of Health, and Controller Walton. Damback asks to have them enjoined from purchasing the city's supply of vaccine virus privately. He contends that the vaccine should be bought by contract after the city's wants have been regularly advertised and the different manufacturers of the vaccine given an opportunity to present their bids with an analytical description of the component parts of their product. Under the present system, it is averred, all the city's supply of vaccine virus is purchased privately from a company in $100 lots, in compliance with the pretended authority of an ordinance of Councils, but it is contended that the ordinance is in violation of the law passed by the State legislature on May 23, 1847, which requires that all work and supplies to be furnished to the city shall be done by contract.

Banquet of ex-Resident Physicians of University.—Fifty former resident physicians of the Hospital of the University of Pennsylvania held their second annual dinner at the University Club Saturday evening, February 28. Dr. Barton Cooke Hirst responded to the toast, "The Old Hospital and the New." Dr. William E. Hughes dwelt on "The Golden Days," when those present were resident physicians. Dr. Charles H. Frazier, Dean of the Medical School, recalled "Old Members of the Staff," while Dr. Edward Martin told of "Some Wild Residents I Have Known." Dr. John Carpenter discussed "The ex-Resident as a Specialist." The officers chosen were: President, Dr. George E. de Schweinitz; Vice-Presidents, Dr. Penn Gaskill Skillern, Dr. Edward Martin, Dr. W. E. Hughes, and Dr. John H. Jopson; Secretary-Treasurer, Dr. Albert P. Francine.

Ulcerative Endocarditis of Long Duration.—This interesting case was reported at the Philadelphia Pathological Society February 26 by Dr. David Riesman. The patient was a white male, laborer, aged thirty-one years. He had served in the Spanish-American War and gave a history of having had yellow fever, typhoid fever with two relapses, chronic malaria, and fracture of an arm and leg. For three months while in the army he suffered with irregular fever and chills accompanied by pain in the eyeballs, photophobia, vomiting and diarrhea. Since that time he had a similar attack each fall and spring, each lasting about three months and causing practically the same symptoms. Each was preceded by a peculiar buoyancy or feeling of well-being which came to be recognized as an aura preceding the attacks. In September, 1902, the patient had his last attack and was soon after admitted to the Philadelphia Hospital. Examination was fairly negative except for a distinct cooing heart murmur. This murmur ceased a short time before the patient's death, which occurred early in January, 1903. Autopsy revealed large vegetations on the aortic valves and two perforations of the leaflets, one being a very large one. There were multiple infarcts of the spleen, but no involvement of other organs. The larger opening in the valve leaflet was closed by a recent fibrinous clot which undoubtedly had caused the disappearance of the murmur. An interesting point in this case was its duration—from September to January. Dr. Riesman has seen ten cases of malignant endocarditis of which two recovered. The longest duration was six months.

Diseases of the Biliary Passages.—Dr. John B. Deaver, as the guest of the James C. Wilson Medical Society, addressed the students of the Jefferson College on the above topic February 24. The anatomy of the structures in question was considered in detail and the indications for medical and surgical treatment of diseases of the passage pointed out. Surgical interference is demanded in most acute infections except catarrhal jaundice, and cholecystitis without jaundice or where there is rapidly diminishing tenderness. In cases of cholelithiasis the indication for medical treatment is acute obstruction of the common duct, the treatment being morphine, rest and hot applications followed by intestinal antiseptics, bathing, etc. Other cases demand surgical treatment. Dr. Deaver gives calcium chloride in 20 or 30-grain doses four times daily a few days before operation, and 60 grains by rectum after operating in all cases as a routine practice, although he is not positive that it does any good in the way of guarding against hemorrhage. For post-operative oozing, opium is of more value than calcium chloride. Dr. Deaver closed by urging physicians to study more living pathology, by which he means the observation of symptoms and then standing by the surgeon and actually viewing the conditions found at operation.

CHICAGO.

General Increase of Sickness.—Practising physicians report a general increase of sickness throughout the city, although the prevailing diseases, especially bronchitis, influenza and pneumonia, are not of a very severe type. Influenza is practically epidemic, but the deaths from this malady are not so numerous as they were a year ago, when the number of cases was much fewer.

Suicides.—There have been 50 per cent. more suicides and 16.8 per cent. more other violent deaths this year. Only the deaths from infantile convulsions (16 per cent. less), diphtheria (13.6 per cent. less), scarlet fever (30 per cent. less), and influenza (35.4 per cent. less), are fewer this year than last.

The Fly as a Carrier of Typhoid.—Dr. Alice Hamilton read a paper on this subject before a meeting of the Chicago Medical Society. She has made an exhaustive inquiry into the part played by the common house-fly in the recent epidemic of typhoid fever in Chicago. Most of her work was done in the laboratory of the Memorial Institute for Infectious Diseases. She reaches the following conclusions: (1) The epidemic of typhoid fever in Chicago during July, August, September and October, of 1902, was most severe in the Nineteenth Ward, which, with one-thirty-sixth of the city's population, had over one-seventh of all the deaths from this disease. (2) The concentration of the epidemic in this locality cannot be explained by contamination of the drinking water, or of food, or on the ground of ignorance and poverty of the inhabitants, for the Nineteenth Ward does not differ in these respects from several other parts of the city. (3) An investigation of the sanitary conditions of this region shows that many of the street sewers are too small, and that only 48 per cent. of the houses have sanitary plumbing. Of the remaining 52 per cent., 7 per cent. have defective plumbing, 22 per cent. water closets with intermittent water supply, 11 per cent. have privies connected with the sewer, but without water supply, and 12 per cent. have privies with no sewer connection. (4) The streets in which the sanitary arrangements are worst had the largest number of cases of typhoid fever during this epidemic, irrespective of the poverty of the inhabitants. (5) Flies caught in two undrained privies, on the fences of two yards, on the walls of two houses, and in the room of a typhoid patient were used to inoculate eighteen tubes, and from five of these tubes the typhoid bacillus was isolated. (6) When the discharges from typhoid patients are left exposed in privies or yards, flies may be an important agent in the dissemination of the typhoid infection.

Meeting of the Board of Trustees of the American Medical Association.—The Board of Trustees of the American Medical Association held a meeting in this city several days ago, and, according to the Journal of the Association, Dr. J. N. MacCormack, of Bowling Green, Kentucky, has been asked by the Board to devote his whole time to the work of organization as the representative in this work of the American Medical Association. Dr. MacCormack has accepted the position, and will immediately enter on his duties. It is expected that he will spend much of his time in the field, and will be at the command of such State societies as may think his services can be made useful to them.

The Illegitimate Child in Chicago.—Mr. Hastings H. Hart read a paper on this subject before the Chicago Medical Society, Feb. 18, and among other things, he said that Chicago is the great dumping-ground for the social wreckage of the interior. There is no city in the Union which suffers as much as Chicago in bearing the burdens that belong to other communities. The physician more than any other public servant, he says, is the guardian of the morals of the community. His relation to his patient is such that he is able to exercise a potent influence at the time when it is most needed. Many a young woman has been rescued from dire peril and has become a good wife and mother through the wise and timely intervention of a faithful physician. He said that four parties are to be considered: The child, the mother, the father and the community, including relatives and friends. It is the duty of the physician to see that the child's life and health are properly guarded before and after birth. It is his duty to throw the whole weight of his influence, personal and professional, against the commission of the crime to destroy the life of the child before birth. If the mother is physically capable, she should invariably be required to nurse her child. The second party to be considered by the physician is the young mother. Most physicians stand ready to furnish their professional services without recompense, and to see that she has proper physical care as long as she is in the physician's hands. As to the third party, it is almost a universal rule that while the father of the child is the chief offender, he suffers least of all. Under the laws of Illinois, the father may be compelled, if able to make provision, up to the sum of $550.00; but in practice comparatively few fathers are made accountable. The mother is deterred from taking legal steps, sometimes on account of affection for the father, more often on account of her unwillingness to subject her own name and that of her family to the ignominy which attends bastardy proceedings. Mr. Hart then considered the fourth party, namely, the community, including the parents and friends of the offenders, the multitudes of young people who are exposed to like temptation, and the charitable public. Every increase of faithful, conscientious and intelligent treatment of this subject on the part of those who stand in the position of guardians of the public morals, tends to diminish the heavy burdens which rest upon the good people of the community, and toward the uplifting and purification of the body politic.

GENERAL.

Course in Bacteriology.—A post-graduate course in Bacteriology and Bacteriological Diagnosis will be given at the College of Physicians and Surgeons, Baltimore, Md., beginning May 1, 1903, by Dr. Leonard K. Hirshberg, A.B., M.D., of Johns Hopkins University.

Offer of Hospital Site.—Dr. Walter B. Platt of Baltimore has written to the Commissioners of the District of Columbia tendering them, in the name of a lady, a piece of property to be used for maintaining a children's hospital for Washington. The Commissioners have replied acknowledging the receipt of the letter and saying that they will take the matter under consideration.

New Hospital at Cambridge, Md.—The plans and specifications for the new Cambridge Hospital to be built at Cambridge, Md., have been completed, and members of the building committee are having estimates of the cost prepared by a builder at Cambridge to whom the contract will probably be awarded. Mr. John E. Hurst, head of the firm of John E. Hurst & Co., Baltimore, a native of Dorchester county, has agreed to contribute $15,000 of the $40,000 required to purchase the site and erect the hospital. The State has appropriated $5,000 and the town of Cambridge $5,000. Mr. Hurst is taking a deep interest in the selection of the site and preparation of the plans. It is practically settled that the site will be in East Cambridge on a bluff that is the highest point in the town, commanding a view for miles up and down the Choptank river.

New Buildings for the University Hospital (Columbian), Washington.—Since the reconstruction of the old hospital building and the addition thereto of the extensive new structure just completed, the institution is now provided with private rooms, newly and comfortably furnished, with all modern improvements, some of them with private bath-rooms, arranged en suite, and with open fireplaces. Elevators, sun parlors, a roof garden, and the best arrangements for ventilation, heat, and for every home comfort and convenience have been provided. In the original building arrangements have been made for a Maternity Service, and in the new structure, besides the private rooms, wards for medical and surgical cases are now ready. Three operating-rooms, fully equipped with modern aseptic and antiseptic appliances, and rooms for a Dispensary Service, have also been supplied, including a complete sixteen-plate Bowen X-ray apparatus. The new building for the Medical and Dental Schools is five stories high, with four large lecture halls, each seating from 200 to 350 students; large laboratories for chemistry, pharmacy, histology, physiology, bacteriology, pathology, and anatomy; recitation-rooms, professors' rooms, museum, library, reading-room, and study-rooms. The Dental Infirmary rooms, with good southern light, modern chairs, and every facility for operative and prosthetic work, are unexcelled. The central location of the hospital and the readiness with which it can be visited by members of the medical staff in case of need are especially desirable.

Obituary.—Dr. W. E. B. Davis, of Alabama, was killed Feb. 24 by being thrown from his horse and then run over by a moving train. Dr. Davis was thirty-nine years old. He was born in Trussville, Ala., and came of a line of physicians. He graduated at the University of Alabama, studied at Bellevue in New York, was in Europe for two years and practised in Birmingham, Ala. Dr. Davis was one of the rising young men of the South and his loss is a severe one.

Dr. Harry Gifford, formerly a surgeon in the United States army and lately surgeon of the Vandalia railroad, was found dead at Richmond, Ind., Tuesday, of heart trouble.

Dr. Henry W. Richter, prominent among physicians of Brooklyn, died Tuesday at his home, No. 620 Carlton avenue, in his sixty-fifth year. For nearly thirty years he had practised in Brooklyn and his father had been a physician in Brooklyn before him. The cause of death was general debility.

Dr. Charles H. Ohr died in Cumberland, Md., Tuesday, in his ninety-third year. He was born at Funkstown, Md., was educated at a private academy, and received his diploma from the University of Maryland in March, 1834. In the cholera epidemic of 1853 he introduced the use of strychnine, and, despite the great mortality of the time, he lost only 113 out of 600 cases. He wrote many books on medicine and was president of the Maryland Medical and Chirurgical Faculty in 1872. Dr. Ohr was for ten years consulting physician to the Cumberland Board of Health, was a member of the City Council three terms, Mayor of Cumberland from 1859 to 1866, when he was also surgeon at the Federal Hospital here, and was State Senator from 1864 to 1867.

OBITUARY.

T. GAILLARD THOMAS, M.D.

It was Dr. T. Gaillard Thomas who said "The older I grow in medicine, the stronger becomes the conviction that the medical profession exemplifies that 'great heart of the Saviour of the world.'" Dr. Thomas has lived his years and it is the conviction of all who knew him that his own life was a model of the highest type of manly vigor, of Christian sympathy and of professional skill.

His sudden death on February 28, at his winter home, in Thomasville, Ga., was a shock to all who believed his health to be unimpaired. Although he was in his seventy-second year, he was a man young in spirit and in vigor, and it was not thought possible that the attack of grip, from the effects of which he went South to recover, would prove fatal.

Dr. Thomas impersonated the culture of generations flowering in the ardent personality of a genius. He came of a well-known family in South Carolina. His father was the Reverend Edward Thomas, the descendent of an English forebear sent by the Church of England to South Carolina, while his mother, Jane Marshall Gaillard was the daughter of Judge Gaillard of the Supreme Court of South Carolina, who was of old Huguenot blood.

Dr. Thomas was born in 1831 and received his education in the Medical College of Charleston from which he graduated in 1852. Although his education was received in the days when a good manner and friendship with the faculty were chiefly essential to a medical degree, Dr. Thomas, nevertheless, was able to come unfriended to New York and carry off the honors from New York men in a competitive examination at Bellevue where he spent some time as resident physician.

After spending a year and a half visiting different European hospitals he returned to New York where for half a century he was a leader in medical thought. He grasped the great ideas that were revolutionizing medical science, such as Virchow laid down in his science of Cellular Pathology, and was one of the foremost men to build up on them the vast structure of modern medicine in this country.

Throughout his life he has been a teacher as well as a physician. It was in 1855 that he began his work in New York. He soon organized a quiz class, the second of its kind in the city where he first showed his remarkable capacity as a teacher. From his success in this line Dr. Thomas was made adjunct lecturer in the University, and later physician to Bellevue Hospital where he was one of the first to bring about real advances in the science of exact diagnosis. The keynote of his success was direct observation, and throughout his life he retained the warmest enthusiasm for bed-side work, with ability to impart his methods and enthusiasm to others. Physicians who called him in consultation, and he was one on whom many relied, were often surprised at the quickness and sureness of his diagnosis, which was the result of long and varied experience.

Among his earliest friends was the late Dr. Metcalfe who took him into partnership and who introduced him to a large clientele which Dr. Thomas, by his charming manners and courtesy as well as by his skill and keen attention to his profession was well able to hold.

In 1863 he was made Professor of Obstetrics in the College of Physicians and Surgeons, and later became Professor of Gynecology in the same college. Dr. Thomas preferred surgery to medicine and in 1868 withdrew from general practice that he might devote himself more exclusively to his gynecological work. He resigned the position of visiting surgeon to Bellevue which he had held for fifteen years and became a surgeon of the Woman's Hospital. He was also connected at various times with St. Luke's, Roosevelt, the French, and Nursing and Child's Hospitals.

T. GAILLARD THOMAS, M.D.

The result of his experience in his chosen branch of the profession he contributed freely to medical journals and also incorporated it in a work on gynecology which has passed through six editions and of which 60,000 copies have been sold. It has also been translated into seven languages.

The original work that Dr. Thomas did in gynecology, the methods of operating that he devised and taught, and the practical applications of science to practise such as the device of the incubator for the prematurely born all placed him in the position of a leader and it is safe to say that he did more to mold the ideas of his generation in gynecology than any other man in this country.

Dr. Thomas was a man whose talent for friendships amounted to an art. On the occasion of his seventieth birthday, some three hundred representative physicians of the country met to do him honor and on that occasion he spoke himself in love and praise of the group of distinguished men who had been his friends and who had passed away; while his living friends, men who stand first in the ranks as physicians, toasted him with words of friendship and regard.

Dr. McLane said of him "Dr. Thomas has learned that precious art of knowing how to live, and his high sense of honor and integrity has won for him the highest esteem."

The Rev. Dr. Greer said "To meet and find a *man*, was it not the greatest of all human charms? for back of all professions and all successes, whatever the field his was the charm of the *man*."

Dr. Weir Mitchell spoke of him as "a friend, intelligent and noble.". Dr. Welch said "There are many to call him master. He has numberless friends and admirers, and his colleagues appreciate the lovable character of the man who has the best and the highest ideals."

Though one may cull the spoken words of friendship from those who could appreciate him professionally, it is impossible to gather any expression of the feelings of love and gratitude that he has inspired in the hearts of his patients. Through fifty years of active work he has continually relieved suffering and given his patients the confidence of returning health; and more, he has worked out new methods by which relief has been given to multitudes who knew him only in name.

No brighter crown need be awarded to a man at the end of a long and useful life than the consciousness of having left the world better than he found it and the knowledge that his friends hold him noble and generous, and dear.

CORRESPONDENCE.

TRANSACTIONS OF FOREIGN SOCIETIES.

French.

POINTS IN INFANT FEEDING—SYPHILITIC ENDARTERITIS AND NEPHRITIS IN AN INFANT—PARALYSIS OF THE CERVICAL SYMPATHETIC ON ONE SIDE, FOLLOWING EVACUATION OF A RETROPHARYNGEAL ABSCESS BY HILTON'S METHOD—INFANT SUFFERING FROM UNUSUAL KIND OF MICROCEPHALY—MECHANISM OF LARGE INTESTINE—DITA BARK AND AUSTRALIAN BITTER BARK—PAIN—HEART OF MAN AGED FORTY-SEVEN YEARS—SURGICAL TREATMENT OF GASTRIC AND DUODENAL ULCERS.

During the past month the meetings of the scientific and medical Societies in Great Britain have been rich in interesting material, from which the following has been culled for the benefit of our readers:

C. C. DOUGLAS, at a meeting of the Glasgow Obstetrical and Gynecological Society, Jan. 28, 1903, read a paper on some points in infant feeding. While recommending maternal nursing as the best, he pointed out that in certain cases where the child did not thrive an analysis of the milk might indicate the error. He had found in some cases a reduction of the percentage of fat and in others a diminution in the sugar or an increase in the amount of proteid gave the best results. Cow's milk used without dilution was not recommended as a routine, but a dilution to one to three without the addition of cream or sugar (preferably lactose) was too much. The speaker pointed out how the reduction in the fats might interfere with the absorption of the lime salts (as lime soaps) and might thus have some bearing on the etiology of rickets. For the infant fed on cow's milk the milk ought to be pasteurized and absolutely free from preservatives.

G. E. SOUTHERLAND and J. W. THOMSON WALKER, at a meeting of the Society for the Study of Disease in Children, Jan. 16, 1903, contributed a paper on a case of syphilitic endarteritis and nephritis in an infant. The child presented evidences of congenital syphilis and there was paralysis, and later rigidity of the right arm, the lower extremities also becoming rigid and the head retracted. Albumin was present in the urine. At the necropsy there was endarteritis of the cerebral arteries and softening of the left frontal lobe of the brain. The kidneys showed diffuse interstitial nephritis. A second case of interstitial nephritis due to congenital syphilis was also described. Dr. Southerland and Mr. Walker considered that the most important change in this form of arteritis took place in the adventitia and that syphilitic arteritis was a secondary and not a tertiary manifestation of the disease. The etiology of nephritis in children was often obscure and the importance of syphilis as a cause was greater than was often supposed. Many of these cases were probably unrecognized, owing to the slight naked-eye changes.

SYDNEY STEPHENSON, at the same society, described a case in which paralysis of the cervical sympathetic on one side had closely followed the evacuation of a retropharyngeal abscess by Hilton's method. The symptoms were characteristic and included ptosis, contraction of the pupil, enophthalmosis and lowered intra-ocular tension. No change in the state of the blood vessels or the function of sweating were noted.

Dr. Guthrie showed an infant, aged five months, suffering from an unusual kind of microcephaly. The occipital bone showed a bean-like projection, and overlapped the two parietal bones. There was in addition spasticity of all the limbs. The child's features did not suggest imbecility.

R. W. LEFTWICH, at a meeting of the Brixton Medical Society, held Jan. 29, 1903, read a paper on the mechanism of the large intestine. He pointed out that the structural peculiarities of the colon were all adverse to the view that peristalsis there was the one propelling force. The large lumen, the weak muscular development, the sacculation of the walls, the fixation and the upward force of the ascending colon, all presented obstacles. In cases of orthopnea a stream had to be forced against gravitation for months together without the help of valves, and yet constipation was not a special feature of the condition. Dr. Leftwich then proceeded to demonstrate that there were two other forces at work. The course of the large intestine suggested a syphon, its short ascending limb, starting from the right iliac fossa, being the ascending colon, and the long descending limb, terminating at the anus, being the descending colon and rectum. There was therefore always a fixed fecal column in the colon, the cecum being usually empty. After defecation a stream propelled by peristalsis of the small intestine filled the cecum, and, on reaching the fecal column, pushed this forward and disturbed the balance; syphonage was then set up; the cecum was emptied and the rectum was filled. The necessary rigidity of the walls of the colon was obtained by a tonic contraction of the longitudinal bands which also deepened and thickened the dissepiments between the saccules. The existence of this tonus was shown by the deep retraction of the anus, the longitudinal fibers of the rectum being continuous with those of the bands; by the maintenance of the transverse colon in situ without waviness, notwithstanding that it was twice as long as its bed; and by the elongation of the colon which took place in sigmoid obstruction. The tension upon the bands and the unequal distribution of gas and solids in this condition accounted for the movements which had been mistaken for peristalsis. The saccular undulations described by Boas must be quite ineffective for propulsion and were connected with absorption only. Further, the cecum presented a good example of the hydrostatic paradox. It had a small feed pipe, the ileum, and a piston of much larger sectional area in the fecal column of the ascending colon, the whole forming a kind of hydraulic lift, the gain being equal to about ten times in the ascending colon and twice in the sigmoid flexure. It was just where this power reached its minimum that syphonage came to the rescue. Dr. Leftwich showed experimentally that syphonage set up a vacuum in the cecum, the ileocecal opening being blocked probably by a sucking through of the mucous membrane of the ileum like an incipient intussusception, for which lesion a good explanation was thus offered. The formation of a vacuum might have a highly beneficial effect in evacuating the appendix.

J. GORDON SHARP, at a meeting of the Therapeutical Society, held Jan. 20, 1903, read a paper on dita bark (*Alstonia scholaris*) and Australian bitter bark (*Alstonia constricta*), two drugs belonging to the dogbane family. He also showed specimens of the bark and demonstrated the chemical and pharmacological actions of the crude drugs and their alkaloids. Dita bark was found in India, Malaysia and Australia. Strong sulphuric acid applied to the surface gave a characteristic pink color. It contained three alkaloids, ditamine, echitamine and echitenine, all belonging to one series. The first was the chief; it gave a pink reaction with strong sulphuric acid; in frogs it paralyzed muscle by coagulating its substance, and was found to act like curare in some respects. This must not be forgotten, for it might explain the fact why in large doses it had often been found to produce collapse. The tree yielding Australian bitter bark was found in Eastern Australia. The bark itself was brown, very bitter in taste and aromatic in odor. Strong nitric acid applied to the inner surface gave a dark red reaction, similar to the color produced by the same reagent on the bark on nux vomica. It contained four alkaloids: alstonine (formerly known as chlorogenine), porphyrine, porphyrosine and alstonidine. Alstonine was the most important of these. Commercial alstonine was mixed with resinous matter and was not crystalline, but the pure alkaloid could be made to crystallize. It gave a red reaction with strong nitric acid. A solution of the alkaloid in water, as well as a watery solution of the bark was fluorescent. In its pharmacology it resembled both nux vomica and quinine, but it had not so much resemblance to curare as dita bark or its alkaloids. Like quinine it paralyzed amebæ, rotifers, etc. On beetles, crickets and wasps it acted like quinine. In frogs, in medium doses, it acted like strychnine, but tetanus was not so marked or so universal. For the full play of symptoms both vessels and nerves must be intact. Its final action was to paralyze completely, evidently due to excessive activity. The therapeutics of the drug had been worked out by the Bancrofts of Australia and by Bixby of the United States. It was quite distinct in its action from dita bark, and acted on the skin, producing a mild diaphoresis. In the kidneys it increased the volume of the urine and toned up and slowed the pulse. The tincture was especially useful in influenza immediately after the acute symptoms had passed off. The pharmacopœial dose was too large: one-half of the amount specified was enough and when prescribing the tincture that made from *Alstonia constricta* should be ordered.

JAMES MACKENZIE, at a meeting of the Burnley and District Medico-Ethical Society, held Jan. 8, 1903, read a paper on Pain. He defined pain as a "disagreeable sensation, due to stimulation of some portion of the cerebrospinal nervous system and referred to the peripheral distribution in the external body-wall of the cerebro-sensory nerves." This definition implies that the sensation of pain, from whatever source the stimulation arose, whether in the brain, in the spinal cord, in the posterior root ganglia of spinal nerves, in the viscera or in the external body-wall was invariably referred to the peripheral distribution of a sensory cerebrospinal nerve and that therefore pain was a phenomenon peculiar to the cerebrospinal nervous system. In the above definition, the division of the nervous system into a cerebrospinal and sympathetic was maintained, as the clinical facts pointed to the conclusion that the sensation of pain (and probably other sensations) did not arise from stimulation of the sympathetic nerves unless through the intermediary of the cerebrospinal nerves. Reference was made exclusively to the pain and associated symptoms arising from stimulation of the viscera. Experimental observations on animals were practically of no avail in determining this question. Such experiments as had shown the various organs to be insensitive proved only that the stimulus employed had not been adequate to produce pain. On the other hand, in such experiments as had demonstrated that the stimulus was adequate and the animal had shown pain, no evidence was available to determine in what region the pain was felt.

J. DOUGLAS STANLEY, at a meeting of the Midland Medical Society, held Jan. 21, 1903, showed the heart of a man, aged forty-seven years. The patient had complained for some time of recurring precordial pains which had extended down the left arm, of a tendency to faint, and of dyspnea. The cardiac sounds were feeble and short and the pulse was feeble, irregular and weak. The patient died suddenly, and on post-mortem examination extensive chronic aortitis with degeneration of the valves of the left side was found. The myocardium was abnormally tough and showed fibrotic changes. At the apex the wall of the left ventricle was very thin and showed a slight tendency to bulge, forming early cardiac aneurism.

B. G. A. MOYNIHAN, at a meeting of the Royal Medical and Chirurgical Society, held Jan. 27, 1903, read a paper on the Surgical Treatment of Gastric and Duodenal Ulcers, illustrated by a series of 50 cases. Dr. D'arcy Powers said that the treatment of gastric ulcer was passing through the same transition stage as had been seen in the treatment of hernia and intussusception. Because in some cases recovery took place without operation, that was no reason for postponing operation. He thought that in all cases in which perforation had taken place, operation should be performed at the earliest opportunity. He considered that drainage of the peritoneum was advisable and necessary in some cases, and he mentioned a case in which some eight or ten days after operation a subphrenic abscess had formed and the patient had died. He thought that in this case the patient might have been saved had drainage been resorted to. He thought that there was rather a tendency to overfeed the patient, with the result that vomiting was induced. He quite agreed with Mr. Moynihan that pyloroplasty was an unsuitable operation and should be abandoned, as the results were unsatisfactory. He considered that the accurate adjustment of the openings in the stomach and intestines was of great importance.

SOCIETY PROCEEDINGS.

THE MEDICAL ASSOCIATION OF THE GREATER CITY OF NEW YORK.

Stated Meeting, held at the New York Academy of Medicine, February 9, 1903.

The President, Andrew H. Smith, M.D., in the Chair.

Renal Decapsulation.—Dr. Leonard Weber presented a young man, twenty-one years of age, the subject of chronic Bright's disease. The urine had been persistently abundant and of low specific gravity (about 1.010), and contained a large amount of albumin. The patient suffered from repeated aggravated attacks of uremia, and might be said to have chronic uremia. Early in 1902, in spite of very large doses of tincture of ferric chloride, and the most energetic treatment by other measures, his condition became very bad. He was sent to the Post-Graduate Hospital on May 5, and on May 12 was operated on by Dr. Edebohls. Although the disease had then existed for eleven years, there was no atrophy of the kidneys. Both of these organs were of the mottled variety, and were about twice the size of the normal kidney. The capsule was easily detached. He remained in the hospital for one month, and on June 7 again came under Dr. Weber's care. Since then there had been no uremia whatever, and he felt so much better that he was able to do light work. The specific gravity of the urine still continued as low as before, however, and albumin was still abundant in it. (Specimens exhibited.) Dr. Weber referred to two other patients, brothers, who had been in almost exactly the same condition as this one, both of whom had died in uremic coma shortly before he was operated on, and said that at the time the operation was performed it seemed in his case also that the end must come very soon. Dr. Edebohls exhibited the cicatrices left by the operation, and said that the wounds always healed by primary union. No weakness of the back or other parts resulted from the operation. Before the operation the lower points of the kidneys had always been tender on external palpation, but no such tenderness now existed.

The Treatment of Chronic Bright's Disease by Renal Decapsulation: A Report of Progress.—Dr. George M. Edebohls read a paper with this title, to open a discussion on the address by Dr. William H. Thomson, at the annual meeting, January 12, on the Treatment of Uremia. He said that by persevering effort he had been enabled to see or get word from all the patients operated on by him, so that he could present the status up to date. The first renal decapsulation ever performed for the relief of chronic Bright's disease was done by him on June 10, 1892, and the patient was permanently cured. This case, together with reports of the five preliminary operations which led up to this procedure, was published in the MEDICAL NEWS of April 2, 1898. Subsequent papers giving reports of other cases of his own and a *résumé* of the work of other surgeons in this field were published in the *Medical Record* of May 4 and December 21, 1901, and of April 26, 1902. From 1892 to 1901, inclusive, Dr. Edebohls personally operated on 19 cases, and during the year 1902, on 32 cases. Of this total of 51 cases, 29 were in males, and 22 in females, and the average age was 34 years. In 32 cases the Bright's disease was far advanced. In 41 of the cases the period which had elapsed between the first recognition of the disease and the operation varied from one month to 19 years. The general average of this period was three years and four months, and in 32 cases it was fully four years. Nearly all the cases were attended by cardiac or other complications. Of the 51 cases, 29 were of chronic interstitial nephritis, and in all but nine only one kidney was operated on; 14 were of diffuse nephritis; and eight of parenchymatous nephritis. If only one kidney was affected by Bright's disease, he said, the patient suffered very little, and the condition might be discovered only accidentally.

Preparation for the Operation.—The chances of success for the operation are enhanced by the patient's remaining in bed for a week previous to it. This gives the heart a rest, if cardiac complications are present, and affords the best facilities for any preliminary treatment that may be required, as well as for systematic investigation of the quantity and condition of the urine. There are three conditions the presence or absence of which affect the facility with which the operation may be performed: (1) Great length and obliquity of the twelfth rib. This difficulty must be overcome by posture and a modification of the incision; (2) mobility or firm appearance of the kidney. When there is firm fixation it is generally necessary to incise the capsule at any point that can be reached. For separating the capsule the rubber-covered index finger is the best instrument; (3) the firm or more or less weak attachment of the capsule. Great caution and gentleness should characterize all attempts at decapsulation. In this operation there is often considerable danger of destroying some of the already diminished working tissue of the kidney, and it should never be performed except by surgeons who are already more or less familiar with renal surgery in general. The danger is greater from the condition present than from the operation itself. The procedure, however, should not be too prolonged; so that one hour should be the limit for the decapsulation of two kidneys. Dr. Edebohls has often found half an hour sufficient for operating on both organs. A "team operation" has been proposed, with two surgeons each working on a kidney, but this would hardly be feasible, as two operators, each with his necessary assistants, would inevitably interfere with the prompt accomplishment of each other's work. Another expedient suggested is that only one kidney should be decapsulated at a time; but this, too, is to be deprecated, as the time that the patient would be under an anesthetic for two separate operations would necessarily be longer than for operating upon both kidneys during one period of anesthesia.

Anesthetics.—In all but three of the operations the anesthetic used was ether, preceded by nitrous oxide gas. In three, nitrous oxide and oxygen were administered by Dr. Thomas L. Bennett. In one of these ether had to be used afterward, and finally chloroform, in order to prevent death on the table. This patient died twelve hours after the operation from acute dilatation of the heart.

Results.—Of the 51 patients operated on, less than one-half resided in the city of New York, 14 died, and the time of death after the operation ranged from 12 hours to eight years. A brief history of all these cases was given. Five died from uremia, and three from acute dilatation of the heart. Others, one of whom at least was cured of the nephritis, died from different diseases. Of the 14 cases, seven lived for periods ranging from two months to eight years, the average being nearly three years. The mortality shortly after the operation was 13⅔ per cent. Dr. Edebohls said that for one reason or another (the patients often begging him to operate) he had felt compelled to accept a number of cases in which death seemed a foregone conclusion. He gave them the benefit of the doubt, however, as surprisingly good results had been obtained in some other cases of the same kind. Some of these patients were physicians, who urged the operation at all hazards. In advising for or against operation, he said, each case must be judged on its own merits. The derangements of the heart and vascular system so commonly met with must always be taken into careful consideration. If cardiac hypertrophy be not too marked, or complicated too greatly by other conditions, it is not a contraindication. The case of a patient past sixty should be very carefully investigated, as the changes due to advancing years may render an operation inadvisable. Still, this is a relative matter, and many a person at seventy has a younger heart than others only forty or fifty years old. He divided the entire 51 cases into two categories; those operated on up to July 1, 1902, and those operated on during the last seven months. In the first class 24 cases were available for the study of results. In order to judge of these we must be familiar with the history and course of Bright's disease untreated or treated otherwise than by operation. From a study of this we find that there is often improvement for months at a time. To prove that a cure or substantial amelioration of the condition has been effected it must be shown (1) that there is a practical improvement, (2) that it is lasting, and (3) that it is steadily progressive. Only two of the 24 cases named have resulted unsatisfactorily. One is that of a woman who remained without any evidence of nephritis for nearly four years. Four years and 10 months after the operation (when the right kidney alone was decapsulated), albumin and casts reappeared in her urine. Notwithstanding this, however, she feels entirely too well at the present time to think of taking any step that would interfere with the activity of her daily life. The second case is that of a married woman, twenty-three years of age, both of whose kidneys were operated on in 1901. For eight months she showed considerable improvement, but during the last year she had an attack of diphtheria. Since then she has suffered from a succession of colds, and there has been no gain in her condition. Of the other cases, 10 have been radically cured and 12 greatly improved. Specimens of urine have been obtained from all but two of the patients.

Effects on the Urine.—As a result of the operation a steady improvement in the condition of the urine is observed. There is an increased daily output of urea, and a tendency toward a gradual return to the normal amount is shown. Of the casts, the first to disappear are those of the tubules; later the granular and hyaline casts also disappear. The albumin, which also finally disappears, remains for a long time after the casts cease to appear. Dyspnea and circulatory disease likewise improve in varying degree.

Cases in Physicians.—Eight of the cases operated upon were in medical men, who all believed that their only chance of living depended on renal decapsulation. Three of these died, in two there was only moderate improvement, and in the remaining three the results were most gratifying. Dr. Edebohls read letters from the last three, in which they described their cases and the results following the operation. The first physician, twenty-six years of age, felt greatly encouraged. There had been a gradual improvement in his condition, though he had had some acute exacerbations, the result of colds. The second, thirty-six years old, was operated on nearly a year ago. Since then he has had no dyspnea, and has never missed a day in attending to his practice. He stated that this was the first winter for three years in which he had not suffered greatly from cold hands and feet. He is also free from the headache, pains in the calves of the legs, palpitation of the heart, irregularity of the pulse, and feeling of weakness and lassitude which formerly troubled him. The third, fifty-one years old, who had chronic diffuse nephritis, was operated upon on June 2, 1902. He wrote that he resumed work again on June 12. He has greatly improved, and now feels better than for five years past. In all these cases the urine has shown a steady tendency to return to normal. All Dr. Edebohl's patients but one report that their general health has improved along with the improvement in the renal condition.

Cures.—In order that a case may be pronounced cured fullest verification must be had of the disappearance from the urine of all albumin and casts for a period of at least six months. Among the ten cases cured there was one accidental death one year after the operation. The average period that has elapsed since operation is four years. Eight of the patients suffered from chronic interstitial nephritis. The cases of 1902 were as a rule of great severity.

Treatment of Uremia and Clinical Conditions.—Dr. F. P. Kinnicutt was convinced that any success in the treatment of the varied symptoms of uremia must be based upon an exact study of the clinical conditions in each individual case. A routine treatment for all cases, or even one method for the same patient in all attacks, is not only unscientific, but inefficient and often harmful. Dyspnea is most common in the interstitial forms of renal disease, probably from the almost constant arterial changes present. In addition, myo- and endocardial changes are often associated with the arterial degeneration, and an intelligent and effectual treatment of the symptoms must have for its basis a definite knowledge of the existing conditions. Where the predominating conditions are endarteritis and hypertrophy of the left ventricle, Dr. Kinnicutt's experience is that success in relieving the dyspnea will be proportionate to an ability to dilate the arteries. Among the arterial dilators nitroglycerin undoubtedly ranks first. Occasionally chloral hydrate will prove efficient when this fails, and the combination of morphine, given hypodermatically, with the arterial dilators will sometimes be more useful than the dilators alone. Where there is catarrh of the gastric mucosa, and even in cases in which the symptom is evidently due to toxemia, lavage often gives the greatest relief. Where the vomiting is associated with high arterial tension the vasodilators alone are often efficient.

Uremic Convulsions.—These may occur in acute nephritis in both the chronic parenchymatous and interstitial forms. When they are associated with acute renal disease, whether in children or adults, venesection gives the promptest relief and most enduring results. From a child of five years two to six ounces of blood may be drawn, according to the general condition. As this phenomenon is associated with a high arterial tension, nitroglycerin and chloral are useful. When there is a greatly diminished urinary secretion, intestinal irrigation with a normal salt solution of low temperature (100° F. to 105° F.) may also be of service. It is his practice to follow venesection by an intravenous injection of a saline solution of such a temperature, of double the amount of the blood withdrawn. In the convulsions of chronic parenchymatous nephritis the heart's action is usually feeble and the arterial tension low; so that vasodilators are contraindicated, and the best results can be obtained by the combined use of cardiac stimulants, intestinal irrigations with salt solutions of a high temperature (115° F. to 120° F.), and hot packs daily for considerable periods.

Oxygen and Alkalies.—Dr. Homer Wakefield said that Dr. Edebohls' operation increased the blood-supply of the kidneys, and he had no doubt that the increased amount of oxygen had a great deal to do with the good results obtained. He had treated uremia largely in connection with heart disease, employing oxygen and the Schott treatment, which acted to a considerable degree like the nitrites; the aim being to increase the renal blood-supply. He had also found the increasing of the alkalinity of the blood by means of colon injections of a saturated solution of sodium bicarbonate of great service. This, moreover, had a beneficial influence upon the heart and its action. He mentioned a case of general anasarca with uremia in which the patient in three days was completely relieved of the uremic and other symptoms by the use of such injections of the colon.

What the Edebohls Operation Appears to Accomplish.—Dr. Leonard Weber said that although the patient presented by him this evening had had chronic uremia for a year or more previously, he ceased to present the symptoms of it immediately after decapsulation of both kidneys, and had had no return of them since, notwithstanding the fact that his urine still remained as full of albumin as ever. How had such improvement been brought about by decapsulation in this and other cases? In his opinion, by the rapid growth of a vascular network spreading from the arteries of the fatty capsule upon and over the surface of the denuded kidney, and thus relieving the cramped and more or less obstructed circulation within the cortical substance, and collaterally carrying off venous blood and lymph through other channels beside the renal vein. Whatever regeneration of morbid epithelia, glomeruli and tubules may take place after decapsulation will occur in consequence of the relief which the hyperemic kidney obtains by the newly established collaterals at its periphery. To the theory that an improved supply of arterial blood by the ingrowth of arteries from the fatty capsule more or less deeply into the renal cortex will regenerate the diseased kidney Dr. Weber said he was unable to assent. His patient had not been cured of his nephritis, and he never would be. He also expressed his belief in the existence of such a thing as unilateral Bright's disease.

The Future for the Operation.—The President said that in chronic Bright's disease there was a deposit in the kidney all the way from the pelvis to the glomeruli. Consequently, the circulation from the center toward the periphery was very greatly impeded, as the blood had to be driven through vessels compressed by the deposit around them. But, as the result of the decapsulation devised by Dr. Edebohls, the blood was brought from the exterior directly to the glomeruli, and the ischemia of the organ was thus relieved. It seemed to him that the benefits to be derived from this procedure had only been foreshadowed as yet. As soon as the profession came to understand that the operative mortality from it amounted to practically nothing, it would be undertaken earlier and with much better chances of success; so that he could not but believe that the operation had a wonderfully hopeful future before it.

The Real Value of the Operation.—Dr. Edebohls said that the whole matter must resolve itself into one of experience. Before it is a settled thing three, four, or five years may be required. In the meanwhile, if those who have the opportunity to operate will follow up their cases with care, and if physicians will cooperate with the surgeons in the matter, the desired end will be the more successfully and quickly attained. After the operation the patients pass again into the hands of their medical attendants, and on the latter the obligation rests to study the subsequent course of the disease. If such studies are adequately carried out it ought not to take many years before a just estimate of the value of the procedure can be arrived at.

THE NEW YORK STATE MEDICAL ASSOCIATION, NEW YORK COUNTY BRANCH.

Regular Monthly Meeting held Monday, January 19, 1903.

The scientific business of the evening began with the presentation of specimens by Dr. J. Riddle Goffe and Dr. Parker Syms. Dr. Goffe presented a large polypoid tumor of the uterus which could not be removed in the ordinary way and for which supravaginal hysterectomy proved an ideal method. In cases of large polyps there is always danger of secondary complications of various kinds, but none occurred in this patient and recovery was prompt and complete.

Dr. Syms presented a loculated hydrocele which had been removed. The presence of the loculi was easily detected from the external appearance of the tumor and the existence of the partitions would make radical cure of the hydrocele by the ordinary method of evacuation by the trocar and the introduction of iodine inevitably a failure.

Acute Septicemia.—Dr. C. C. Barrows gave in brief a report of a case of acute septicemia for which intravenous injections of formalin had been given with excellent results. The patient was brought to the hospital with a temperature of 104.3° F. and a pulse of 140. A few days after admission the temperature rose to 105° F. Notwithstanding the employment of free irrigation of the uterus the temperature could not be made to stay down. After curettement there was a drop in the temperature, but it went up again and all the symptoms of general sepsis began to manifest themselves. Careful examination of the blood showed the absence of malarial organisms. No local lesions of the genital tract could be found and everything seemed to point to the fact that the patient would die from the continuous high temperature.

Injections of Formalin.—Under these circumstances, as a last resort an injection of 500 c.c. of a solution of formalin of the strength of 1-5,000 was given. This caused a drop in the temperature, but after 36 hours, it rose once more. At the end of 48 hours the second injection of formalin of the same strength, but this time of 750 c.c. in amount was given. This was followed by a slight chill. No other unpleasant symptoms manifested themselves, and the patient made no complaint. The injections were made directly into the vein of the arm. The second injection caused a drop in the temperature in a very short time, and since then there has been no further rise in temperature. Before the injection, streptococci were found in pure cultures in the blood, but since, none have been discovered either by the culture method or the microscope. Careful microscopical examination of the blood did not show any changes in the red blood cells as the result of the injection, and no blood was found in the urine nor was there an excess of blood pigment, that would have indicated an exaggerated destruction of red blood cells.

Previous Employment of Formalin.—This is not the first time in recent years that formalin has been employed for intravenous injections with therapeutic purpose. Dr. McGuire reported a series of observations made on himself and tuberculous patients with this drug. He first injected 50 c.c. of the equivalent of 1-5,000 formalin solution into his own veins with no bad results, though the substance could be detected in the urine. He then injected 260 c.c. of a 1-2,000 formalin solution without bad result. He found, however, that an injection of 1-800 formalin solution proved provocative of constitutional symptoms and was followed within a very short time by the occurrence of blood in the urine. After these experiments Dr. McGuire employed the formalin injections in the treatment of tuberculous patients from which he reported good results.

It would seem then, Dr. Barrows thinks, that the profession has in formalin an ideally harmless antiseptic which can be freely injected intravenously, and which will destroy micro-organisms without injury to the body cells. Dr. Barrows considers that while one case does not show definitely the value of the formalin solution it is at least suggestive of a line of work that may prove eminently helpful for a series of cases that thus far have been considered inevitably fatal.

Second Case—Dubious Result.—A second case in which the formalin injections were employed was reported for Dr. Silver, who was unavoidably absent. The patient's temperature as the result of an infective puerperal condition became very high, and on admission to the hospital was 105.5° F. For two weeks off and on it touched 105° F. many times. In order to bring the temperature down, hypodermoclysis of normal salt solution was employed and this caused a fall of temperature to 102° F. On succeeding days, however, the temperature rose again, though on one day after the administration of the injection of salt solution the temperature fell from 105° F. to 96° F. As the normal salt solution seemed to give only temporary relief, it was resolved to employ the formalin solution. By mistake this was employed in the strength of 1-2,500, and after 100 c.c. had been administered, the patient became comatose and a fatal immediate issue seemed inevitable. The patient recovered, however, without serious result. Afterward 750 c.c. of formalin solution, 1-5,000, was employed, and caused a decided drop in the temperature. The fall in temperature was not, however, any greater than when normal salt solution was employed.

Results of Injection.—Before the injection of formalin, streptococci were demonstrated as present in the blood, but after the injection they were not to be found. Careful examination showed, however, that the hemoglobin of the blood was lessened to a marked degree, and that the red blood corpuscles were shriveled and apparently lacking in vitality. Considering the after results and the efficiency of the formalin solution, which was practically no greater than that of normal salt solution, employed in the same way, the additional risks would scarcely seem to encourage the use of the formalin solution.

Third Case—No Result.—Dr. Bayner reported a case in the service of Dr. Briggs of St. Vincent's Hospital, in which formalin solution was employed to overcome a high temperature, evidently caused by the presence of a septic condition. The affection began as the result of a wound acquired in a domestic fracas. Before Christmas the woman's husband threw a spittoon at her and inflicted a bad scalp wound. This healed rather kindly, but she caught cold and some secondary infection seems to have taken place. About ten days after the accident her left knee became swollen and a condition of bronchopneumonia developed. About Christmas time and for five days afterward her temperature was 104° F. and streptococci were found in the blood. Notwithstanding the employment of all ordinary remedies, the fever continued to be high. Shortly after the announcements of Dr. Barrows' case 250 c.c. of formalin solution were injected. Soon after the injection the fever went up one degree. The next day the patient was improved. The improvement was noticeable mainly in the respirations, there being no drop in the temperature. As the temperature continued high, 750 c.c. of formalin solution were injected. One hour after the injection the patient's temperature rose to 106° F. Such a rise in temperature is not infrequent when large injections of even normal salt solution are made, so that it should not be considered as particularly serious. No blood was found in the urine, nor was there any increase of blood coloring matters. In six hours the temperature dropped to 101.5° F., but the pulse remained at 150 and the respirations were above forty. The next day the temperature rose once more to 103 to 104 and, as the patient is constantly growing weaker, the outlook is for a fatal issue. In a word in the present case, the formalin injection does not seem to have been of any special benefit beyond what would have been derived from an injection of normal salt solution.

Blood Poisoning and the Streptococcus.—Dr. William R. Pryor said that in only 33 per cent. of the cases of blood poisoning is the streptococcus found in the blood. Its discovery does not necessarily mean a fatal prognosis. It has been found in some conditions, ordinarily not considered very serious. It occurs occasionally in tonsillitis, in rheumatism and at times too, in bronchopneumonia. The presence of the streptococcus is not so serious a sign and the important consideration is the extent of the local infective conditions from which the streptococcus finds its entrance into the blood. As is well known, the micro-organism may disappear from the blood without producing any serious symptoms and without having been specially treated.

Dubious Results and Cases.—In neither of the cases presented as having been more or less successfully treated by formalin injections, does Dr. Pryor think that a serious septic condition was present. There was nothing to indicate in the report of the cases that either patient had a purulent focus from which the streptococcus was being poured into the blood. Dr. Pryor himself has found that iodine seems to be the best antiseptic for cases of grave sepsis. Its presence in the blood can be secured by having iodoform disintegrate in contact with the tissues. If iodoform is placed in the serous cavity, iodine is set free and its absorption causes the death of the micro-organisms in the blood. Dr. Pryor has had this method of treating puerperal blood poisoning for some years at the City Hospital, and considers it the best that has yet been devised.

Varieties of Blood-poisoning.—Dr. Whitridge Williams of Baltimore said that he hoped that the injections suggested by Dr. Barrows will prove as useful as they seem to promise from the first case. The conclusions, however, must be accepted with much reserve. No affections are so liable to sudden variations as septic conditions. Dr. Williams has seen apparently hopeless cases, without any specific treatment, after a week of temperatures varying from 103° F. to 105° F. suddenly improve and then go on to uninterrupted recovery. In one case the temperature fell from 105° F. to 97° F. in a few hours. This woman had had miliary abscesses and other indications of having the micro-organisms in her circulation. The only therapeutic method employed was a uterine douche of sterile salt solution. A proper skepticism then with regard to any remedy suggested for puerperal septicemia seems very proper. It has taken many years to find out definitely that streptococcus serum is of no benefit.

Besides Dr. McGuire's investigations of the possibility of injecting formalin without harm he published the results of a series of hundred cases of tuberculosis in which this remedy had been employed. His observations were exploited by the newspapers and caused considerable excitement. The newspapers continued to revert to the subject until finally eighteen months later, Dr. McGuire himself announced that the results in subsequent cases had not been satisfactory to him, and that he was not ready to recommend the remedy nor to publish anything further with regard to it, until his invstigations were more complete.

Other Antiseptics.—At Budapest it was suggested some years ago that dilute solutions of bichloride of mercury, would be useful for septic conditions. Subsequent investigators did not find them as beneficial as the discoverer. Some of the silver salts have been used with excellent effect according to claims of investigators. The use of silver nitrate intravenously has in some conservative observers' hands produced excellent results. Dr. Williams has seen it employed several times without producing any effect. The beneficial result when solutions of the silver salts are employed is due to the occurrence of leucocytosis. When employed by Dr. Williams there has been no leucocytosis and consequently no improvement in the patient's symptoms. As a matter of fact it is not so much the micro-organisms in the circulation as the fresh supply of them constantly given from the local focus of suppuration, that causes the danger and the symptoms in the case.

Danger of Curettage.—Dr. Barrow and others mentioned that the curette was employed in their cases before the formalin solution was introduced into the circulation. Dr. Williams considers this a most nefarious practice. It certainly kills far more than it saves. Nature's efforts to shut off the micro-organisms from admission into the circulation are rendered abortive, fresh absorbing surfaces are exposed, and as all of the septic material cannot be removed, no ultimate good is done. If there are streptococci in the uterus, then the practice is especially dangerous, if only putrefactive micro-organisms are found, and if there is a considerable quantity of material in the uterus, this may be removed with the finger, which is better than any instrument and gives better assurance of complete removal. The use of the curette is certainly to be deprecated, and should not be taught as is commonly the custom.

Last Resort.—Dr. Polk said, in discussing Dr. Barrow's paper, that the question of the injection of a dilute solution of formalin, reminded him of a discussion in the Academy a quarter of a century ago, when it was suggested that the use of carbolic acid would cure puerperal fever. Since then many antiseptic methods have been tried and some relief of symptoms has been found in recent years by the use of the salines. Now that it is definitely known that a potent antifermentative can be introduced directly into the circulation, it would seem that a remedy very hopeful at least has been put into the hands of the physician. While it can do no harm, it may do good and, as a last resort, represents the promise of a distinct step forward in therapeutics.

In closing the discussion Dr. Barrow said that the condition of the patient seemed hopeless, and that there was question of the employment of any remedy that might possibly do good. Under these circumstances the good result that followed the use of formalin seemed to justify the very highest hopes, and to vindicate a place for the treatment in the hands of the general practitioner in these serious and usually fatal cases.

Significance of Oxaluria.—Dr. J. Bergen Ogden read a paper in which he discussed our present knowledge of oxalates in the urine. Since the experiments and observations of Dr. Helen Baldwin in Dr. Christian Herter's Laboratory show that oxaluria occurs in animals if there is excessive fermentation in the gastro-intestinal tract. This paper will be published in the MEDICAL NEWS.

Hyperacidity of the Urine.—Dr. Thomas W. Hastings said that febrile conditions and an excess of meat eating lead to hyperacid urine. The old idea that excess of acid in the urine precipitates the urea and phosphates, is false. It must not be forgotten that there may be an amphoteric reaction in the urine, because of the presence at the same time of salts that act as acids and alkalies to litmus paper. The only reagent that can be depended on to give the reaction of the urine with certainty is phenolthalein and a decinormal solution of sodium hydrate. This paper will be published in the MEDICAL NEWS.

Prognostic Value of Diazo Reaction in Tuberculosis.—Dr. Frank C. Wood gave the results of the study of 363 cases of tuberculosis with reference to the presence of Ehrlich's diazo reaction in their urine. Of the 117 patients who died, 81 had a positive diazo reaction. Of the 246 discharged 22 were discharged for reason and had no effect upon the statistics. Of the remaining 224 over 90 per cent. had no diazo reaction. None of the early cases presented it, so that the diazo reaction seems to present a fairly accurate prognostic test in tuberculosis. This paper will be published in the MEDICAL NEWS.

Careful Living and Long Life.—Dr. Edward W. Lambert read a paper on the prognostic significance of albumin in the urine. He said that under present circumstances the main factor in the shortening of life was not so much any hereditary weakness of tissue as injudicious living and the excessive wear and tear of business. The worry of getting rich shortens more lives than any other single factor that may be mentioned almost. In our time, however, excesses in the use of alcohol and tobacco are sure to bring in their train degeneration of important structures that preclude the possibility of long life. Very often the first hint of this tissue degeneration is found in the kidneys. The first sign of it is usually albuminuria, but the presence of albuminuria does not of itself always have so serious a prognosis as is sometimes thought. In Dr. Lambert's judgment no healthy man has albumin in his urine, there is always something out of gear and yet the condition may not be serious and may be only passing. The most prominent causes of albumin in the urine are undoubtedly extremes of cold or heat. The disturbance of circulation due to these factors leads to congestion of the kidneys and this causes the leakage of albumin through the renal tissues. The albuminuria due to these causes is only temporary and not of great significance, though it may be considerably more than a trace in amount. It is possible, however, for the kidney irritation which allows the escape of albumin to be prolonged for a sufficient length of time to produce tissue changes, or beginning degeneration at least and this, in course of time, and as the result of exacerbations prove progressive until a serious kidney condition is established.

Dr. Osler took occasion in a paper not very long ago to call attention to a number of cases in which patients who had been refused life insurance because of the presence of the supposed pathological condition of their urine had yet lived for many years after refusal of insurance seemed to foretell a near demise. He expressed the opinion that the decisions of life insurance examiners were entirely too arbitrary in this matter, and that undoubtedly too much care was exercised in the selection of risks to the exclusion of really healthy persons. Dr. Osler's cases, however, only furnished the evidence of the few who survived. The statistics of the many who refused for practically the same reasons, died within a few months, or at most a few years, are known as a rule only to the insurance companies.

Albuminuria and Life Insurance.—For twenty years Dr. Lambert has insisted on the prognostic value of albuminuria as an index for life insurance. The mere presence of albuminuria can not always be considered of unfavorable prognosis and sometimes the condition is a most difficult one to appreciate. The significance of albuminuria is always a difficult problem to appreciate. Dr. Lambert told the story of two partners, successful business men, who applied for life insurance on the same day. One of them had so small a trace of albumin that after filtration its presence could scarcely be detected, even when all the conditions favorable for its recognition were fulfilled. The other partner had a considerable amount. The second applicant was refused absolutely. The first after repeated examinations never presenting more than this very slight trace of albumin was considered to have physiological albuminuria and was given a policy. The successful applicant died in eighteen months. His partner lived for twenty-five years.

Anomalous Cases.—In one applicant for life insurance, who asked for the highest policy the company was then giving, and who presented himself about three in the afternoon, a distinct trace of albumin was found. The patient was indignant, went to his family physician, a very prominent medical man, who asked for a sample of his morning urine and could find no albumin. He wrote to this effect to the company. Another afternoon sample showed the presence of albumin, and though many examinations of the morning urine showed no trace of its presence, the afternoon urine always proved to have albumin. The applicant was finally refused. The patient died five years later from cerebral apoplexy, the indirect cause of which was chronic nephritis. In signing the death certificate his family physician stated that the indirect cause of death was chronic nephritis, which he had known to exist for five years. It is evident then he had come around to the insurance company's way of thinking.

Albumin and Casts.—Dr. Lambert said that in young men particularly the occurrence of albumin, even with a certain number of casts, is not necessarily significant of true nephritis. Not infrequently curious hyaloid bodies with club-shaped ends gradually running to a point at the other end are found. At times too, these casts contain mononuclear cells that evidently have their origin in the kidneys. These may disappear, however, without leaving any trace of their having been present. For such patients, their mode of life, especially highly seasoned food, large financial operations, loss of sleep, nature's sweet restorer, make the prognosis much more serious than the presence of albumin.

Albuminuria and Long Life.—Dr. S. O. Vanderpoel said that during the last fifteen years many applicants have been refused life insurance because of the presence of albumin in the urine, and yet after over ten years are still alive. If the whole list of those refused for this reason, however, be taken, it will be found that the death-rate among applicants refused is four or five times as great as that among applicants of the same age and expectation of life. The unfavorable prognosis is least in simple albuminuria. In such cases life may be continued for many years with proper care. A broker who applied for insurance in 1875 had no albuminuria. In 1878, on reapplication for further insurance a trace was found. Many times during the next fifteen years, albumin was found to be present. He died after nineteen years, having fulfilled only one-half his expectation of life. In the meantime any serious illness would surely have carried him off. Dr. Vanderpoel said that we do not as yet know the true significance of albumin in the urine. Nucleo-albumin, for instance, is practically of unknown quantity. There is room for most interesting and valuable investigation in this matter. Nucleo-albumin, for instance, probably has a very definite significance, for it is known to occur in eclamptic cases. Albumin alone is not so significant as albumin and casts, and yet the mere presence of even a trace of albumin means a lessening of the expectancy of life.

Dr. Porter said that most family practitioners either disagree with the insurance examiner with regard to the significance of albumin, or lessen the effect of the applicant's refusal by making little of it. Nothing better could happen to a man who has albumin in his urine than to be refused for life insurance and thus have impressed upon him the necessity for careful living. Such lives are invariably longer for the warning thus impressed upon them.

NEW YORK NEUROLOGICAL SOCIETY.

Stated Meeting, held February 3, 1903.

The President, Pearce Bailey, M.D., in the Chair.

Paradoxical Pseudohypertrophy in Infantile Cerebral Hemiplegia.—Dr. L. Pierce Clark presented a boy of ten years with a family history of epilepsy, insanity, alcoholism, rheumatism and tuberculosis. The personal history was good except that when five years old he had suffered from a severe attack of smallpox. This had been followed by infantile cerebral hemiplegia, the convulsions being general and lasting for hours. A left hemiplegia was noticed the day after the convulsion. Three months after the initial stroke he had *status hemiplegicus unilateralis* attended by high fever. There were 74 *grand mal* fits in four hours. At present there were from three to five epileptic attacks daily with an epigastric aura. Hypertrophy of the calf on the paralyzed side was first noticed three years ago, but the left arm was moderately atrophic. The ankle also showed bony hypertrophy, a still rarer condition.

Case of Myoclonus.—Dr. Clark presented a Jewish boy of eleven years having a negative family and personal history. Two years ago without known cause a spasm developed in the left biceps, triceps, pectoralis major, latissimus dorsi and sternomastoid muscles, and in a few weeks the same muscles in the right side became involved. The spasm was clonic in character and occurred from twenty to forty times a minute, with never more than a few minutes of entire freedom from the spasm. In a few months the muscles of the pelvic girdle became affected, particularly the glutei, quadriceps and sartorius. Arsenic had been of no avail in suppressing the spasms. No spasms had been observed in the fingers or toes. The musculature was good, and there was no atrophy or sensory change. All the reflexes were normal. The diagnosis of myoclonus was made on the bilateral, clonic, lightning-like character of the spasms of the proximal muscles.

A Case of Multiple Neuritis with Intact Reflexes.—Dr. Clark also presented this case, a child of five years, an imbecile and possibly epileptic. The boy had apparently had an attack of meningitis last July. He now presented the high-stepping gait and the exaggeration of all the reflexes. There was a marked diminution in the response to the faradic current. At present, he was in the recovery stage of multiple neuritis, apparently of lead origin.

Dr. J. Ramsey Hunt asked if in the case of myotonia there was a history of fright; also if the term, myoclonus, was used in the generic sense. The case had much in common with Henoch's chorea.

Dr. W. M. Leszynsky asked on what basis it was concluded that the multiple neuritis was due to lead. The distribution corresponded more to that of alcohol, and from the fact that the child had been taking beer, the probability was that it was an alcoholic neuritis.

Dr. Clark said that he looked upon the case of myoclonus as of the Friedreich type. The history of fright usually had to be taken with a good deal of allowance. He did not think it could be of the choreic type referred to because muscular atrophies occurred and ran a rapid course. The condition was not improved by the usual treatment for chorea. The case of multiple neuritis was first thought to be one of alcoholic origin, and an effort was made to obtain such a history, but the history of beer drinking was not at all satisfactory or definite. The child had been playing around a cellar and had freely dabbled in lead paint a short time before the illness.

A Case of Myokymia.—Dr. R. M. Daly presented a man of twenty-eight, a printer by occupation. There was no history of lead colic, and no family history bearing upon the case. For years he had engaged freely in athletic sports. About one year before coming under observation, after having walked for eleven hours, the calf muscles began to twitch. When first seen, last October, his general condition was good, as were also his habits. His gait and station were normal, and there was no paralysis of the muscles. Facial innervation was more marked on the right side. There was a fibrillary twitching of all the muscles of the legs and of the posterior muscles of the thigh. Sometimes the same bundle of muscular fibers would contract several times in succession. A blow upon the muscles brought out the contractions well. The electrical contractions were negative. There had been no evidence of atrophy during the time the patient had been under observation. There was no disturbance of the special senses, and the superficial reflexes were undisturbed. The knee-jerk was increased; there was no clonus or Babinski. He had received increasing doses of strychnine and arsenic, and had received galvanic and X-ray treatment, but all without benefit. Quite recently he had been placed on gelsemium, and the twitchings had diminished somewhat.

Dr. C. L. Dana said that while the condition was neither important nor grave, he thought it was of interest to recognize it as a distinct symptom. Fibrillary twitchings were common enough in states of exhaustion of any kind. Myokymia occurred in neurasthenic states, and sometimes also in alcoholics.

Non-Septic Cerebritis.—Dr. Harlow Brooks read this paper, reporting a case. He said that these cases had not been frequently reported in recent medical literature, and hence, the case he had seen seemed to be worthy of reporting. The disease was not so very rare, but it was the exception for it to be recognized because of our scanty knowledge regarding it. Microscopical examination in a considerable number of instances had been found to be the only certain method of recognizing the condition. A considerable number of cases recovered wholly or partly. The cases going on to recovery were apt to be set down as examples of hysteria. Metabolic poisons and those toxins produced by the growth or action of bacteria should be just as competent to produce inflammation as injuries. In all inflammatory diseases the question of the occurrence of hemorrhages depended upon the severity of the inflammation and the situation of the lesions. He had no sympathy with those who insisted that an inflammation was necessarily dependent upon bacteria or their products. Acute encephalitis might terminate in death if the disease involved parts of the encephalon essential to life. When complete recovery ensued it was probable that the inflammatory products were almost completely absorbed. When there was only partial absorption there would be more or less impairment of the functions of the brain. Such a condition not infrequently occurred in alcoholics or after severe attacks of insolation. The following case was then reported: The patient was a girl of nineteen years, by occupation a domestic. There was a history of headaches and bilious attacks. She was naturally rather dull. On the night previous to her entrance to the hospital she appeared to be as well as usual, but was found unconscious the next morning, and was thought to be suffering from poisoning. On admission, she was unconscious, and the respirations were stertorous. In response to pin-pricks the hands and feet were withdrawn. The pupils were moderately dilated and reacted somewhat irregularly to light. She was unable to swallow and did not respond to the usual forms of stimulation. Kernig's sign was absent. On October 21, or two days later, the urine was normal except for a trace of albumin. The temperature varied between 100° F. and 101° F. Two days later some casts were found in the urine. On October 25, a bed-sore appeared to be forming over the sacrum, and the temperature was rising. There was a leucocytosis of 14,000. On October 27 the patient took two ounces of water by mouth, but with this exception all nourishment had been by rectum. On October 30 she spoke once, as she had done on the previous day. The bed-sore was getting rapidly worse. On November 1 she spoke rationally and complained of pains all over. Some nourishment had been taken by mouth. She was very uneasy during the night. On November 6 the temperature varied between 102° F. and 105° F. and the pulse between 140 and 160. She died with a temperature of 106° F. Several blood cultures were taken before death, and these proved negative. An examination of the eyes was also negative. The necropsy was begun two hours after death, and was conducted by Dr. Janeway. Nowhere in the body was there any inflammation except, of course, in the bed-sores. Slight cerebrospinal meningitis was found of the cellular type. There was also a general non-septic cerebritis, most marked in the cortex and particularly in the motor area. There was degeneration of many of the ganglion cells in the cortex, apparently of recent origin, and of many of the fibers arising from the large pyramidal cell layer of the cortex. There was diffused degeneration of many of the fibers passing through both internal capsules, and limited to no particular portion of the capsule. There was inflammation of the tissues of the cerebellum, though to a much less degree than in the cerebellum. There was degeneration of many of the descending fibers of the pons and medulla. There was also degeneration of the chief descending tracts of the spinal cord and of some of the fibers in the ascending tracts. There were cytoplasmic changes in the ganglion cells of the anterior horns of the spinal cord. The examination showed the case to be one of organic and not functional disorder. It seemed safe to assume that the cause was not an infection, and the almost unavoidable conclusion was that the lesions were of toxic origin, possibly bacterial. The patient had been in the habit of taking headache powders, and it was possible that this was responsible for the cerebritis.

Dr. J. Arthur Booth said he had seen this girl a few hours after her admission to the hospital, and had also been present at the autopsy. She was deeply comatose and there was absolutely no previous history. The pupils were moderately dilated and they reacted to light. There was absolutely no response to pin-pricks except in the feet and hands. He had been unable to make a diagnosis. At the autopsy, the brain appeared to him normal except that it was rather soft.

Dr. B. Sachs preferred to speak of this condition as a non-suppurative encephalitis. He had tried in a number of instances to recognize these cases and differentiate them from other cerebral conditions, particularly from apoplexy. However, he had found it extremely difficult to make the differential diagnosis. In children there was a special type in which the patient passed slowly into a state of unconsciousness, and remained there for some days or weeks, when consciousness was slowly regained. After this the most striking symptom was a persistent aphasia, though the general clinical picture was that of a cerebral hemiplegia.

Dr. W. M. Leszynsky said that he had had an opportunity of examining this girl about one week before her death. At that time her condition was similar to that described by Dr. Booth. He learned that the rise of temperature had been coincident with the progress of the extensive sloughing bed-sore, and it was evident that the patient was then suffering from general sepsis. He was disposed to think that this condition of general sepsis must have had considerable influence upon the post-mortem findings. He recalled a case in which a woman had remained unconscious for three months, requiring to be fed by the stomach tube during this time. Her condition was supposed to be due to ovarian trouble, and as at that time the fashion was to remove the ovaries for slight cause, both of her ovaries were removed without much benefit. She regained consciousness after the operation, and described her condition during the unconscious state. She died shortly afterward, and the post-mortem findings failed to throw light upon the nature of the case.

Dr. Joseph Fraenkel said that the existence of non-purulent encephalitis had been proved in the monograph of Oppenheim. He would adopt Oppenheim's teaching with regard to these cases. The absence of the usual etiological factors, the presence of only very slight focal symptoms and the presence of fever should lead one to think of the existence of non-purulent encephalitis.

Dr. Joseph Collins said that he was inclined to diagnosticate acute hemorrhagic non-purulent encephalitis rather frequently—indeed, it was rare for a week to pass without this diagnosis being made. It did not seem to him that there was very great difficulty in making the diagnosis. For instance, a child of two and a half years had been seen at his clinic that day. A short time ago it had become dull, inactive and irritable, and somewhat feverish. On the second day there was a convulsion lasting three-quarters of an hour, most marked on the left side. After the child had remained stupid for ten or twelve days it gradually regained its normal activity. On examination, there was a condition of hemiparesis with normal mentality. This case seemed to him a very clear one of non-suppurative encephalitis. In the class of cases referred to by Dr. Sachs he had never seen any rise of temperature, nor was there that degree of recovery which seemed to him so essential to justify the diagnosis of non-purulent encephalitis. He thought it was about as frequent as pneumonia, and the analogue of it. He had very grave doubt about the case reported by Dr. Brooks being one of non-suppurative encephalitis. There must have been just as great changes in the spinal cord as in the brain otherwise there would not have been such a rapid and extensive development of bed-sore. It was possible that there was present some intoxication that had not been revealed by the investigation, and which might explain the symptoms and the cause of death in some other way. The clinical description seemed to point to encephalomyelitis.

Dr. R. H. Cunningham said that he had seen two somewhat similar cases. One of them was in Mount Sinai Hospital many years ago. The history was that the young woman after a disappointment in love had begun to be sleepy and stupid, and then became unconscious. Pin-pricks or faradic stimulation of the skin caused some response at first, but in a few days she became deeply comatose. The temperature was moderate for a few weeks, and then it suddenly rose and death soon ensued. The autopsy findings were negative. He had examined some sections of the brain and spinal cord, and had found leucocytes surrounding the blood vessels. The Weigert method showed absolutely no change. The diagnosis at that time was subacute cerebritis. In 1895 he had seen a similar case, occurring in a school girl. The symptoms and course were about the same, but death occurred in about two weeks. The autopsy findings here also were negative. The microscopical examination of the brain gave exactly the same results. These findings were certainly not characteristic of any one disease.

Dr. Brooks said that undoubtedly the patient became septic from the large bed-sore, but this was so shortly before death that the autopsy did not show the changes which were ordinarily observed in the organs under such conditions. On admission, the patient had fever, and the bed-sore did not develop for a week or ten days afterward. If there were a septic condition arising from the bed-sore there would have been a general infection of the blood, and various micro-organisms would have been found in the blood, yet a very competent bacteriologist failed to find any such condition. All of the classical stages of inflammation were represented in the brain. He had made careful sections of the cord, but had been unable to find the inflammatory process which one would naturally look for as the cause of the bed-sore.

Case of Myoclonus Multiplex Friedreich.—Dr. J. Ramsey Hunt reported a case of this kind that he had seen in July, 1901, together with the autopsy findings. The man was forty-five years of age, a tailor by occupation, and a man of good habits. A few months before admission to Bellevue Hospital one knee had been operated upon for tuberculosis. The peculiar tonic contractions of the muscles began some months previously. There was a history of despondency from financial straits. The muscles of the arms and legs, and of the shoulder girdle showed very active twitchings. The whole muscle would bound forward as if by an electrical stimulation. No tetanic contraction was detected. The face muscles showed none of these contractions. The latter were most active when the patient was recumbent. The isolated contraction of individual muscles, such as the supinator longus and the sartorius, was the most noticeable feature. Sensation was undisturbed. The tendon and skin reflexes were very active. There were no stigmata of hysteria, and no evidences of mental impairment. A few weeks later he developed fever, and died apparently of general tuberculosis. The myoclonus persisted throughout the acute febrile attack and for fifteen minutes or more after cardiac pulsations had ceased. A careful examination was made of the Rolandic and other areas of the cerebral cortex, of the spinal cord at different levels by all of the usual methods, but with negative results. The affected muscles showed an unusually marked hypertrophy. The transverse striations were normal. In some places a central position of the nucleus of the sarcolemma sheath was noted.

Case of Chronic Tic, with Remarks on the Classification of Myospasms.—Dr. Charles L. Dana read this paper. He said that apparently no case had been observed in England, Scotland or Ireland, whereas 14 cases had been reported in this country, and two other cases had been reported under a different name. After carefully reading the descriptions he had come to the conclusion that no case of paramyoclonus of Friedreich had been reported in this country, not even the case just reported by Dr. Hunt, although it came nearer to that type than the others. The speaker then reported a case of paramyoclonus like those that had been published by other American observers. The patient was a man of forty-two with a history of the mother having had similar attacks during the time she was pregnant with this son. The man said he had been healthy until the age of eleven years, when he had been rendered unconscious by the kick of a horse. Shortly after this the first attack of myoclonus developed. The trouble continued with various remissions for the 23 years which had elapsed before coming under Dr. Dana's observation. When first seen he was nervous, anemic and badly nourished. There was no disorder of the sensory sphere. When the attacks came on he was seized with rhythmic movements of the head, and the hands and feet quivered. During the attack there was considerable palpitation of the heart; he perspired profusely and became exhausted. These contractions came on at very short intervals, and were apt to last for several days unless he took some narcotic, when the attack would cease. The patient had not been improved by any treatment he had employed, including hypnotism. A short time ago the patient reported that his general health was much better, and that the attacks were milder and less frequent. Myoclonus multiplex, Dr. Dana said, occurred also in connection with epilepsy. Mention was made of a case of myoclonus that had been under observation for a number of years. The attacks had developed after an operation on the thyroid gland following an abscess. The contractions were both clonic and tonic, and involved practically the whole musculature of the body. He looked upon the case as a mixture of chronic chorea and tic. Myoclonus occurred in association with epilepsy, chorea, tic and paresis; it also occurred in family forms. All these types of myoclonus were distinctly degenerative types of moble spasm. There was another group of myoclonus multiplex which occurred in the form of recurrent spasmodic attacks, although sometimes the attacks were continuous. The trunk muscles and the proximal segments of the body were chiefly affected, and the contractions were very violent and of a rhythmic character. These cases had been called hysterical myoclonus, but in the cases he had seen there had been no distinct evidence of hysteria. Fright or shock was a common etiological factor; his own case was of the family type. The cases reported by American observers approached more closely to a disease entity than did the case of Friedreich. He was inclined to think that the case of Friedreich belonged more properly to the class designated as myokymia. There had been reported cases of paramyotonus which ran a course quite comparable with that of paramyoclonus.

Dr. B. Onuf said that it was difficult to determine from the clinical reports found in the literature whether the muscles were hypertrophied or atrophied, and the subject was still further confused by the variations in the muscle fibers resulting from the use of various hardening fluids.

Dr. L. Pierce Clark believed that Dr. Hunt's case was a typical one of myoclonus. It was very evident that others had not met with Friedreich's type. In some recent experiments the injection of carbolic acid into animals produced a condition of myoclonus multiplex. Recovery almost never took place in a well marked case. The fact that over half of the cases reported had been associated with some form of disease, especially cortical, would seem to place the disease as cortical and not muscular. The treatment that he had found the most valuable consisted in the alternate use of bromides and chloral, with venesection and hypodermoclysis or enteroclysis at the time of the attacks. In many respects the symptomatology of myoclonus simplex and status epilepticus was similar.

Dr. Hunt said that the examination of many supposedly healthy muscle fibers had failed to reveal any like those in his case, the fibers in the latter being almost double the size of normal ones. It was not mentioned as an essential, but as an interesting, finding. In his opinion, the distinguishing feature of myoclonus of the Friedreich type was the occurrence of contractions of individual muscles not under the control of the well except in conjunction with other muscles in the performance of coordinative acts.

Dr. Dana said that it was evident that we were dealing with two very widely different diseases, one represented by the case reported by Dr. Hunt, and the other, the myoclonus epilepticus described by Dr. Clark, and characterized by very violent contractions and coordinate movements. Dr. Clark had shown that the myoclonus of epilepsy was distinctly a cortical disease.

BOOK REVIEWS.

OPHTHALMIC MYOLOGY. A Systematic Treatise on the Ocular Muscles. By G. C. SAVAGE, M.D., Professor of Ophthalmology in the Medical Department of Vanderbilt University. Published by the Author. Nashville, Tenn.

THIS is the most thoughtful and painstaking piece of ophthalmic literature brought out in recent years, whose merit rests on scientific investigation and clear logical statements. This applies especially to the principles worked out in the first chapter in the study of the "law of corresponding retinal points," the "law of direction" and Listing's plane, the last of which he repudiates, correcting the law. His study of cyclophoria is exhaustive, an excellent contribution to the literature. The language is clear and crisp and his style at times almost epigrammatic.

The paradox of his dictum "After all that has been said, there are two kinds of orthophoria," melts away into the terms *sthenic* and *asthenic*. Yet all of this, we think, the author would regard as subsidiary to the main purport of his book, the elaboration of a perfect plan of treatment of heterophoria. The plan is perfect, but we believe it is based on a wrong principle and cannot endure. His logic is correct; but with an unusual premise, the conclusion of the book as a whole is unsound. The author makes a clear issue when he states of heterophoria "*The treatment,* whether operative or otherwise, *must be directed to the muscles.*" In the interest of truth we oppose this proposition, but only with fair criticism. Therefore we dissent from the *British Medical Journal's* review (Dec. 27, 1902) which says "Here is a book of 567 pages dealing *only* with the function and abnormalities of the *extra-ocular* muscles." The reviewer culpably uses "only," since Chapter XII is devoted to "muscles of the iris and ciliary body," an instructive chapter omitting ophthalmoplegia. "*Extra*-ocular" may be a provincialism, but it is too loose and inaccurate a term to be sanctioned. Without a single appreciative reference to anything in the book, the reviewer makes a contemptuous fling at the author for having busied himself in making so ponderous a volume on a class of cases of which, according to him, "little is seen" in England. What if the book does remind him of Ranney's, should that debar it from consideration on its merits? The reviewer owes courtesy or at least fairness. Yet, if we are not mistaken, the very discourtesy here rings with a true note. The book repels the reviewer; it starts on a wrong basis and is therefore an unsafe superstructure. We can comprehend his feeling but cannot on that account excuse his manner. Besides, we think the subject worthy of all the attention our author has given it. He believes in doing things well, just as Maddox did. We are far from thinking the author has failed to be impressed with the wonderfully delicate and sensitive adaptation of means to ends in Nature's attachments of these muscles, though his plan of practice assumes an anatomical defect in them notwithstanding they are less interfered with than others by adventitious mechanical disturbances.

General prevalence of disturbances of function of the ocular muscles does not excuse the serious error in practice of basing treatment on assumed anatomical defect when inequality of muscle-function is found. Profound respect is due to the attitude of Vesalius toward the law of persistence of anatomical structure and sufficiency. Tenotomies have often done good just as other kinds of practice on unsound principles have turned out well at times. The explanation does not lie here. Gould and others have pointed out that innervation is at fault. Varying states of health in the same individual gives corresponding changes in these muscle tests. Removal of certain faulty conditions in healthy subjects with muscle imbalance restores the muscle balance. Proof in this direction is cumulative. Failure in the other direction is inevitable.

DIE NEUEREN AUGENHEILMITTEL FÜR AERTZE UND STUDIERENDE. By Dr. M. OHLEMANN, Wiesbaden. J. F. Bergmann, Wiesbaden.

IN 1899, Dr. C. A. Oliver edited a translation of Dr. Max Ohlemann's "Ocular Therapeutics" to make it available to English readers. Dr. Ohlemann has now, after the lapse of five years since the preparation of his former work, brought out a new volume on "The Newer Ocular Therapeutics," in which some of the subjects treated of in his former volume are dealt with more comprehensively. Asepsis and antisepsis have a separate chapter. The therapeutics of individual eye-diseases, which formed the bulk of the former work, is not taken up in this. Instead, therapeutic measures applicable to treatment of eye-diseases are taken up in their general characteristics. The newer applications of electricity are given, including radiotherapy. Serumtherapy receives full consideration. This valuable complement to the former work might well receive an English translation to accompany its predecessor.

INTERNATIONAL CLINICS. A Quarterly of Illustrated Clinical Lectures and Especially Prepared Articles on Medicine, Neurology, Surgery, etc., by Leading Members of the Medical Profession Throughout the World. Edited by HENRY W. CATTELL, M., A.M., M.D., J. B. Lippincott Co., Philadelphia.

THE present volume of the International Clinics contains as usual some very interesting practical articles. The treatment of chronic gastric catarrh by Dr. Heinrich Stern of New York contains some excellent diagnostic points and some good practical therapeutic hints. A posthumous report of a case of pernicious anemia with extensive pigmentary changes in the skin by the late Frederick A. Packard of Philadelphia, is a sad reminder of the loss to American medicine by the untimely death of this promising eminently conservative and thoroughly scientific young man. Dr. Lawrence Flick, of Philadelphia, has an excellent article on the differential diagnosis between tuberculosis of the lungs and diseases which resemble it.

In the department of surgery, Dr. Fallon of Worcester, Mass., has a series of plates made from dissections of the inguinal region and meant to serve as guides in the operation of radical cure for inguinal hernia that are as perfect illustrations of their kind as we have seen. The volume closes with a hundred page article on the blood in health and disease, with a review of the recent important work on this subject by Dr. Thomas R. L. Browne of Johns Hopkins University, Maryland, that is well worth reading in its entirety.

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ORIGINAL ARTICLES.

THE ETIOLOGY OF COLDS.

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THE word cold is probably the most used and the least understood in the practice of medicine. Ordinarily, from its etymology, the word is presumed to mean an ailment caused by changes in temperature and especially by severe cold weather. Usually the seat of the affection is the respiratory tract, and a cough is one of the accompaniments of it. We speak at times, however, of a cold in the bowels, or even a cold in a muscle. The result in both cases being painful sensations. While it is supposed that low temperature has much to do with the process known as catching cold, most people are well aware that those who live in a dry, very cold climate as, for instance, our Canadian neighbors, are not so subject to colds as those who live in a moist, changeable climate, and that the inhabitants of the elevated regions of Switzerland are less subject to colds than their compatriots of the same race in the lower levels of the country.

It is even related that while Nansen spent two winters at the extreme north with a temperature for over three months of the year uniformly lower than 30 degrees below zero, he never contracted a cold, nor did any of his men. He had returned to civilization scarcely more than a week when himself and two of his companions were confined to their rooms for several days with grippy colds. It cannot be said either that changes of temperature are the important etiological element, for there are rather extensive daily variations of temperature in the Arctic region and in high mountains. In fact, it is generally recognized now that the most favorable therapeutic effect of climate for the consumptive consists in the daily rhythm of temperature variations which does more than anything else to stimulate and excite the vital reaction that enables a tuberculous patient to throw off the depressing ailment. Burney Yeo said last year at the British Congress for Tuberculosis that this effect was not obtained unless the daily temperature variation was at least 20 degrees.

It is evident then that we shall have to look elsewhere than in mere low temperature for the cause of colds. The old name for the affection was "rheum." This indicates much better than cold what was meant by the condition. Rheum signifies a fluxion or flowing that is an excess of secretion. An ordinary cold represents, then, a reaction of mucous membranes, sometimes of serous membranes, with a consequent increase of secretion. Colds may exist either in the respiratory tract, in the digestive tract, or, occasionally, in the large joints or in the serous cavities of the body, for pleurisies and peritonitis are sometimes said to be due to cold.

In explaining the etiology of these states of increased secretion it is necessary to consider several elements. The excess of secretion usually represents serum from the blood as well as mucus. In order that this serum may find its way out of the blood vessels an excess of blood must go to the part. This may be produced either actively, that is, by the presence of some irritant which causes hyperemia and so active congestion, or by some disturbance of the circulation that causes passive congestion of the part. Over a century ago Erasmus Darwin pointed out that when portions of the surface of an animal's body are made cold and are kept so for prolonged periods there is a loss of tone in the blood vessels of the part with consequent dilatation and the circulation becomes very much slowed. The eventual result is that even after external warmth is restored to the parts a persistent paralytic dilatation of the blood vessels remains that leads to passive congestion.

Such disturbance of circulation in a large skin area cannot take place without corresponding disturbances of the circulation of the interior of the body. The amount of blood in the system is nicely accommodated to the ordinary needs of the organism, but compensatory mechanisms exist by which, when necessary, a large amount of blood may be drawn to the surface and the skin capillaries, or may find its way into the abdominal veins. Under prolonged abnormal conditions congestions result from these disturbances and a state rather favorable to the multiplication of microbes is produced in the tissues.

Head pointed out some years ago in a series of very acute and carefully made observations that when affections of internal organs exist certain skin areas become more sensitive than usual. It is over these skin areas that counter-irritation must be made for therapeutic purposes when the connected organs give the indication. It should be borne in mind then, that whenever the counter-irritating effects of cold are unconsciously or unintentionally applied to such skin areas underlying organs with which they are sympathetically connected are affected. It is in this way, doubtless, that draughts, that is the continuous blowing of cold air for some time over a localized portion of the body, produce their pathological effect.

The sympathetic vasomotor system is a very delicate contrivance meant to produce compensatory changes in the circulation at times when they are needed, but that like all complicated mechanisms may get out of order as the result of unusual factors. In delicate persons the reactions of the vasomotor system are especially liable to be sensitive and the mechanism itself is prone to become disarranged. It is in such persons especially that draughts have their influence. Cold air alone, however, will not produce bad effects, as we have learned over and over again from recent experience in sanatoria for consumptives, where patients get along very well in sleeping rooms with the temperature almost constantly not far above the freezing point.

As a matter of fact, during recent winters in London a number of tuberculous patients were kept constantly on the balcony of one of the large hospitals and this continuous living in the open air, though it was the foggy, moist, unpleasant air of London, proved the best possible remedy for such annoying conditions as constantly recurring pleurisy, hemorrhage that had proved so severe and frequent as to threaten life, and a tendency to cough that could not be overcome by any other means. In the sanatoria in the various parts of the Alps patients' rooms are almost constantly at temperatures so low as to require extra covering and even the wearing of gloves and hoods for comfort.

Cold is then evidently only the predisposing cause for the contraction of colds and other elements are the direct etiology. Undoubtedly bacteria of various kinds enter largely into the problem. Occasionally the breathing in of irritating substances, whether vapors or fine dust, may give rise to a catarrhal condition that resembles a cold. It is not surprising to find that the affection called an ordinary cold is due to microbes, and the etiology thus suggested is no far-fetched endeavor to submit this ailment also to the germ theory.

A number of affections that are at present recognized as distinct were formerly grouped under the word cold. Many of them are now known to be due to specific micro-organisms. Pneumonia, for instance, was formerly a cold on the chest; tonsillitis, even of the diphtheritic form, was, considerably less than a hundred years ago, still a cold in the throat. It was from a severe cold that Washington died, though it seems clear now that the real affection was diphtheria. Rheumatism, that until very recently was considered surely the consequence of dampness and exposure, is now generally conceded to be a specific infectious disease, with a distinct incubation period, self-limitation and probably a specific micro-organismal cause. Cold is in this affection only a predisposing factor.

It would seem worth while then to consider various forms of cold from the standpoint of what we may learn as to their etiology and prophylaxis on the hypothesis that they are due to microbic invasion.

So-called colds in the head or rhinitis is a catarrhal inflammation of the mucous membrane of the nose, and is almost surely due to bacterial invasion. Many people are especially liable to attacks of rhinitis. Specialists in rhinology tell us that in these cases there is always some pathological condition, such as a hypertrophy of the turbinate bones, a deflection of the septum, a spur on the septum, or the presence of polypi to cause a tendency to congestion of the nasal tissues. As a consequence of this pathological condition the delicate mechanism of the nose is disturbed and bacteria that are constantly finding their way into the mucous membrane but are disposed of by natural process under normal conditions find opportunities for growth.

It must be remembered after all that the nose is much more than the mere organ of smell. Its main purpose is to warm the air before it is admitted to the lungs. For this purpose the passages of the nostrils are tortuous and are lined by a mucous membrane that is especially rich in blood vessels. These passages are rather small in caliber and, in states of congestion, may be almost obliterated. When pathological conditions are present, one of the nostrils may easily become blocked up, and the consequent failure of ventilation soon leads to the collection of serum, on which microbes grow rapidly, while the effort to throw off the affected mucous cells gives a nidus for the growth of bacteria in the tissues themselves.

Under these conditions nature's compensatory mechanism asserts itself. There is a free flow of serum from the nose, in which numbers of bacteria are carried off. It is evident then that at the beginning of such a cold at least nothing should be done to prevent this flow of serum. Later on in a cold the mucous tissues seem to have acquired the habit of allowing serum to escape and secreting more mucus than usual, and then belladonna or some such preparation may be employed. The indication is evidently to restore the ventilation of the nostrils by drugs that will tend to decrease the congestion yet without interfering with nature's effort to remove the bacteria present on the mucous membrane. When such congestion is relieved, cleansing remedies that will serve the purpose nature intended should be applied rather freely.

The intranasal structures are, as we have said, extremely delicate, and modern life in our large cities compels it to do its work under especially difficult conditions. Most of our houses are heated by steam or hot water. This makes no provision at all for the supply of moisture necessary to keep the air of closed living-rooms in the properly humid condition. Air at a temperature 40 to 50 degrees will hold a certain amount of water. From 60 to 70 degrees it will take up nearly twice as much water. If the moisture is not present in some available form the air will take it up, as most of us city folk know, from the joints of furniture, from door trimmings, from plants and also from ourselves. The consequence is that the air breathed in and out takes up an immense amount of moisture from the mucous membrane of the nose. Under ordinary circumstances it is said that over a pint of fluid is given off through the respiratory mucous membrane during twenty-four hours. It is probable that this is doubled under the abnormal circumstances of steam or hot water heating, if a certain amount of steam is not being constantly allowed to escape into the air. This keeps the mucous membrane in a continuous irritable condition and predisposes it to catarrhal affections of many kinds. Almost inevitably microbes find their way into the mucous membrane, and, as this is lacking in resistive vitality, the consequence is that an inflammatory process, which is not really a pathological condition at first but nature's protective effort to get rid of the intruders by producing a free flow of serum and mucus before they succeed in finding lodging in the tissues, takes place.

Not infrequently pharyngitis and tonsillitis will be found to follow mouth breathing of cold air when, because of unusual exercise, the patient gasps for breath. A story of having run for a car or walked very rapidly so that the number of respirations went up very materially and mouth-breathing became a necessity, will be found to have preceded the development of the first symptoms of the affection, by from twenty-four to forty-eight hours.

It is well known that there are constantly in the mouth a number of more or less pathogenic bacteria. So long as the resistive vitality of the tissues remains normal they produce no pathological effects When the faucial tissues are blanched by the free access of cold air in large quantities, as happens when the mouth is opened to breathe during severer exercise than usual, the resistive vitality is distinctly lowered.

Such affections are especially liable to follow if the individual has come out of an overheated room in which there are a large number of people assembled or in which there has been considerable dust present, because of the movement of the crowd, dancing or gymnastic exercises. Under such circumstances if a run for a car or a rapid walk with the idea of avoiding the taking of cold by this exercise be attempted some affection of the pharynx or tonsils will almost inevitably follow. Large numbers of bacteria have been breathed in during the stay in the warm room and have collected on the mucous membrane of the pharynx, whence they would gradually have been removed by swallowing, and subsequent digestion in the stomach would have made them harmless, but the almost traumatic effect of cold air gives them favorable locations for growth.

The blanching of the mucous membrane by the sudden access of cold air leaves it in a lowered state of vitality and when the subsequent reaction sets in a large number of the upper layers of cells are thrown off and a disturbance of the mucous covering that allows the penetration of microbes into parts where they easily obtain a plentiful supply of blood serum, because of the congestion that follows, becomes possible.

It is, however, for affections of the respiratory mucous membrane below the larynx that the presence of bacteria in the breathed air is most important. It will usually be found that an attack of bronchitis or of pneumonia was preceded by a visit to some place in which there was a large crowd of people—a theater, a church, a dance hall, a railway station, a political meeting-place, or some such assembly. After sitting for some hours in the usually overheated atmosphere of such places, where the absence of moisture in the air is apt to be a very noteworthy element of the atmospheric condition, people proceed at once to the colder outdoor air.

There is usually a large collection of manifold forms of bacteria in the upper air passages. The nose particularly is loaded with them, and unless the individual is in excellent health the breathing of very cold air leads to a blanching of the mucous membranes of the nose. As a consequence of the absence of blood they become somewhat dry and, occupying less space, air may be drawn almost directly into the lungs, carrying with it some of the bacteria that were lodged in the nasal passages.

It is evident that if such affections are to be avoided much more care will have to be taken than at present of the dust that is liable to collect in places of meeting. Theaters, churches and public halls will have to be very carefully dusted, and the common practice of having them carpeted will have to be given up for the more hygienic custom of rugs that can be thoroughly cleansed at frequent intervals. The dusting of such places will have to be done at times that will permit of the thorough settling of dust and its removal by damp cloths many hours before the crowd assembles.

Another important prophylactic measure that will probably have to be maintained is the construction of such places so that they can be exposed to the action of sunlight. At the present time most of these assembly places are so constructed that a ray of sunlight practically never penetrates them. Sunlight is the great bactericide and would do more than any other hygienic precaution to prevent dust from bearing pathological micro-organisms.

With regard to personal hygiene, delicate individuals will have to be warned of the necessity for avoiding such places, and those of stronger constitutions who notwithstanding the fact are liable to suffer from frequent colds should be advised not to leave these warm rooms where they have been in contact with many other people without a preliminary delay for some time in the cooler air of the corridors, or in the case of the theater, in the foyer. The foreign theaters, and continental social usage particularly, are much better arranged for this purpose. It is not the custom for the audience of a theater to leave immediately and rush into the outer air, but they spend some time in friendly conversation with acquaintances and thus perhaps unconsciously and unintentionally prepare themselves better for meeting the cold air.

This same precaution may seem an exaggeration of care when applied to houses, but the custom of lingering for a few minutes in the hall and in the doorway until the mucous membrane of the respiratory passages has accustomed itself somewhat to the colder air, so that there is not a sudden change from air at a temperature of 70 to 80° F. to a temperature of 20 to 30° F. is extremely advisable. Healthy individuals need no such precaution. Delicate ones, however, frequent subjects of colds, will accomplish much in avoiding some of the habitual valetudinarianism of the winter season in this way.

There is no doubt that at times as the result of exposure to cold or to a draft, muscles become the seat of considerable discomfort. Muscles of the neck and of the shoulder are particularly liable to be affected. These are sometimes spoken of as colds in the muscles, though more often the words neuralgia, or rheumatism, are used in this connection. The mechanism of the affection seems to be that the continuous application of cold from sitting in a draft leads to a paralysis of the vasomotor mechanism in the parts. As a consequence of this a congestive dilatation of blood vessels follows, affecting especially the capillaries. Delicate nerve endings that for proper function require to be kept in a state of the best possible nutrition are thus deprived of some of the nutritive elements that have been so constantly flowing by in the blood stream. It is not surprising then that there should be some sensory disturbance and, as a consequence of the pain, an inability to use the muscles.

It must not be forgotten, too, that all muscles move over other muscles in performing their function. This movement over one another is facilitated by planes of fascia and muscle coverings which partake almost of the nature of serous or articular membranes. It takes but very little disturbance of the circulation to cause a deterioration of the moist glistening surface which enables muscles to move with as little friction as possible. The passive congestion spoken of as a consequence of cold easily interferes with this delicate mechanism. This seems to be a cold, in the ordinary sense of the word of the mechanical effect of exposure. Its more frequent occurrence in the nervously inclined, the underfed, the overworked and the alcoholic shows its pathogenic basis in an instability of nerves, though at times a true myostitis seems to be the basis of the condition.

A very striking indication that a cold is due to microbic invasion is to be found in the fact that the process is nearly always accompanied by fever. This is due to an absorption of toxic materials into the circulation which disturbs the heat regulating mechanism. This mechanism is one of the most delicate in the body, and in cold weather, particularly when, despite a difference of 50 or 60 degrees between the body temperature and that of the outer air, the bodily temperature must be constantly maintained, is rather easily disturbed. The presence of fever is indicated by extent of an actual chill. Very often patients are sure that this is the beginning of a cold, so-called, though in reality a little inquiry will usually show that they have felt uncomfortable for some forty-eight hours or more before.

Not infrequently the origin of the cold is ascribed to some incident exposure, to cold or dampness, or a draft that is supposed to have had its effect a few hours or at most a day before the chill asserts itself. This is nearly always a mistake. A distinct incubation period can be traced and the efficient cause of the illness is commonly farther off than the patient imagines.

The occurrence of fever and chilliness gives an indication also for the first step in treatment. Since there are toxic materials in the blood, the eliminants and especially the emunctories of the body must be made active. Kidneys, skin and bowels serve to carry off from the circulation a certain amount of the toxic material present. The old custom of giving calomel and a hot drink, especially hot cream of tartar lemonade, which acts as a diuretic as well as a laxative and a diaphoretic at the beginning of the affection, is almost sure to make the patient more comfortable and may unload the system of enough depressant toxic material to enable it to react and bring about the abortion of the cold.

On the other hand the use of remedies that tend to lock up secretions at the beginning of a cold is almost sure to be harmful. If the cold is in the intestines free purgation that will remove irritant material is the best possible remedy. Where the cold exists in the respiratory tract, nature's protective effort to get rid of microbic invaders by an excess of secretion of mucus and the pouring out of serum from the blood vessels is the best possible means to shorten the course of the affection. A free flow of serum and mucus and the consequent necessity for expectoration or frequent cleansing of the throat and nose is not convenient. but to lessen this is almost sure to lengthen out the discomfort eventually. In the old, particularly, it is important to second nature's efforts in this respect and not encourage the accumulation of secreted material by the use of quiescent drugs. Great harm is undoubtedly done in this respect by the routine prescription of traditional remedies containing opium. This substance should not be employed except where the racking effect of cough seems, after due deliberation, likely to be a more serious evil than even the retention of microbic toxins.

Physiological Salt Solution.—This term has come to be rather indiscriminately applied to solutions of sodium chloride in water varying from 5 per cent. to 1 per cent. In a recent communication, F. ENGELMAN (Deut. med. Woch., Jan. 22, 1903) shows from a study of the findings of later investigators, that the only solution which is isotonic with human serum or is perfectly indifferent is that containing 0.9 per cent. of sodium chloride. The employment of a solution for medicinal uses should therefore be restricted to this particular strength and a new expression coined or the exact percentage of a given solution should always

SURGICAL TREATMENT IN NON-MALIGNANT DISEASES OF THE STOMACH: RESULTS AND INDICATIONS.[*]

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THE question of the operative treatment of some non-malignant diseases of the stomach is still under discussion. I shall now publish the reflections[†] suggested by the study of 60 patients, upon whom I have operated for benign diseases.

Immediate Results.—Of the 60 operations, 10 have been fatal, 16½ per cent.[‡] If I divide my statistics into two periods they show that, in the first period (1895-1899), out of 23 cases six were fatal, 26 per cent. In the second period (1900-1902), out of 37 cases, four were fatal, 10.5 per cent. Consequently, my operative mortality has been greatly diminished. However, I have had bad cases resulting from the ignorance of many of our physicians, who, not knowing the results of operations, test their patients by medical means, thus weakening them and only advising operation when they are almost moribund.

When taken in time the operation in the benign diseases of the stomach gives very good results. I can prove that very easily if, instead of dividing my statistics into two periods, I divide them into two parts: (1) The first includes the patients sent to me by physicians well informed on the disorders of the stomach. For example, Professor Hayem and my colleague Soupault; (2) the second includes the patients sent to me by other physicians, generally too late. We see that, in the first division, out of 36 cases one alone was fatal (2.77 per 100), and that, in the second division, nine were fatal (26 per 100).

This remark proves most evidently that *the mortality in the operations for non-malignant diseases of the stomach depends almost entirely upon the physician and the early diagnosis.*

Remote Results.—To ascertain the remote results I made inquiry as to my former operations and found 29 patients who had been operated upon from one to six years ago. One pylorectomy was quite well after 18 months. One gastropexy and gastrorrhaphy combined, in a case of atonic dilatation and gastroptosis with cachexia, was completely cured after two years.

Out of 18 gastro-enterostomies for pyloric stenosis[§] (great dilatation of the stomach, vomiting after meals, for two or three days, splash on succession of the abdomen, particles of food in the stomach when the contents were siphoned off before breakfast, etc.) 16 patients were cured, eating everything, following no treatment at all, and two patients considerably improved. In one of these last cases, there were no particles of food in the stomach before breakfast, but pain in the stomach; in the second, the patient increased 12 kilos (27 pounds) in weight, but was obliged to diet.

Three gastro-enterostomies (assisted by Dr. Soupault) performed on patients not cured by medical treatment, who suffered from hyperacidity and who presented the symptoms that I have described under the name of the pyloric syndrome (pain and dyspeptic troubles arising three or four hours after meals without arrest of food and without hypersecretion of gastric juice) were successful. The patients are entirely well after a period of one to 3½ years.

Four gastro-enterostomies were performed on patients who suffered from hyperacidity and from pyloric syndrome without arrest of food, but with hypersecretion (gastrosuccorhea). These had no return of their disease, two after two years, one after 2½ years, and one after three years.

Two gastro-enterostomies for moderate hemorrhage, recurring many times, after the elapse of more than two years were cured.

The prolonged observation of these patients proves that we have not only successful operations in the non-malignant diseases of the stomach, but real and permanent benefit.

Indications.—We will have such success, operative as well as therapeutic, only as we follow some special indications. We do not accept the opinion of surgeons who say that operation is good in every case of intractable dyspepsia. If this practice is followed, a successful operation often results in therapeutical failure. My pupil, Leroy, in his inaugural dissertation, has published some therapeutic failures taken from the practice of other surgeons. Generally the mistake comes in those cases of nervous dyspepsia. It is necessary to make a correct diagnosis.

Atonic dilatation is rarely an indication for surgical interference. Out of my 60 cases there is only one such case. These stomachs have deficient peristalsis, and do not empty themselves in a normal time, but when the contents are siphoned off before breakfast, no particles of food will be found. These cases can be cured by medical treatment, combined with a Sangle de Glénard when, as it frequently happens, the atonic dilatation is associated with gastroptosis. About this special point I agree with the physicians, especially with Professor Hayem and with my friend Soupault.

I think that in pyloric stenosis the operative treatment is indicated so soon as the diagnosis is made, and I cannot understand the distinctions made by many physicians between nervous strictures and those in which the physician can relieve the painful symptoms for a time by diet. The cause remains, the patients weaken by degrees, become consumptive, and finally are obliged to go to the surgeon. But instead of coming in good condition, and running no more operative risk than the man who has a hernia, they are more or less cachectic and often succumb to pulmonary complications.

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[*] Read before the Congress of the French Surgeons, October, 1902.

[†] I shall not speak about six operations for perforation of gastric ulcer with general peritonitis (three died, one cured), these operations belonging to quite a different class.

[‡] These 60 operations include three pylorectomies; one excision of ulcer of the lesser curvature; one resection of a band constricting the pylorus; one duodenostomy in a case of inflammatory and ulcerative lesions due to burns; one gastrorraphy and gastropexy combined; 53 gastro-enterostomies.

[§] In 16 cases the stenosis was the result of an ulcer, partially or entirely cicatrized; in one the result of a burn of the pylorus; in another the stenosis was on the duodenum and a sequence of cholecystitis with periduodenitis.

Why not operate when it is simple and sure? Has any one the idea that an urethral stricture should be treated by potions and diuretics? The lesion is, however, the same. In both cases it is a fibrous stricture. Medical treatment cannot cure the stricture and the condition will gradually progress and the later the operation the worse will be the result. The operative mortality would be reduced to nearly nothing if we had not to operate on patients thus weakened by too long waiting. We ought then to be absolute in our statements that all fibrous pyloric strictures ought to be operated on immediately.

We must not be so absolute, however, in the case of ulcer of the stomach without pyloric stenosis.

The acute ulcer, without any complications, is cured by medical treatment, when this treatment is sufficiently severe.

In chronic ulcer I think that surgical treatment is indicated only in the case of an ulcer with mechanical troubles, and in those of an ulcer which is situated on the pylorus and which gives the pyloric syndrome. Delay is of no avail. Even if the ulcer be cured, this cure will be followed by a fibrous stricture more serious than the spasmodic troubles from which the patient previously suffered. Without wishing to prejudge the exact nature of the hypersecretion of gastric juice, without affirming that all such cases have, like some of those on whom I have operated, an unrecognized ulcer, I think that hypersecretion or hyperacidity associated with pyloric syndrome, is an indication for the operation.

I do not agree with the surgeons who say that excessive hematemesis needs an operation. The operative mortality is high, the cure by medical treatment frequent. On the contrary the *small* and repeated hematemesis require a surgical treatment.

When one has decided upon an operation, the question arises: *Which is the best?* I do the gastrectomy only in those cases in which I fear an epithelial grafting (in four cases out of 60). Pyloroplasty of the German surgeons is not possible in cases of ulcer or of fibrous strictures of the pylorus, in consequence of the rigid state of the tissues. Indeed, after all, pyloroplasty does not completely empty the prepyloric pouch when it is much distended, which is a frequent occurrence. The rôle of pyloroplasty is a very limited one, and I do not perform this operation.

Gastro-enterostomy seems to be, in the nonmalignant diseases of the stomach, the best operation. With the very simple technic that I have described in my *Chirurgie gastro-intestinale,* I have not observed one case of circulus viciosus in my 53 operations.

THE ETIOLOGY OF ECTOPIC GESTATION.*

BY SAMUEL WYLLIS BANDLER, M.D.,
OF NEW YORK CITY;
INSTRUCTOR IN GYNECOLOGY, NEW YORK POST GRADUATE MEDICAL SCHOOL.

IN former years our views concerning the origin of ectopic gestation depended mainly on the discovery of pathological conditions macroscopically evident. Cases were reported with fibroma of the isthmus tubæ or with polyps at the uterine end of the tube. The growth of the ovum in a tubal diverticulum or in an accessory tube was considered to furnish a satisfactory etiology. In some cases the pressure of ovarian or abdominal tumors was supposed to obstruct the onward movement of the ovum. Abel and Freund found in a twisting of the tube and in a failure of development a satisfactory theory for the frequent occurrence of ectopic gestation. Since, in a majority of such cases, peritoneal adhesions are present, these were, and even yet are considered to so alter the course of the tube's lumen as to prevent the entrance of the ovum into the uterus. Therefore, visible inflammations were considered to be the important etiological element.

During the summer Dr. A. Brothers gave me a specimen of extra-uterine gestation combined with a multilocular serous ovarian cyst, with the request that I should find, if possible, a corpus luteum verum in the ovary, though he believed none to be present. We considered that this specimen would furnish a proof of external migration of the ovum and that this migration might stand in an etiological relation to the ectopic gestation. Examination of the ovarian cyst showed no Graafian follicle. Therefore the ovum had come by external migration from the other ovary. In three other cases the absence of a corpus luteum verum on the pregnant side was noted.

The experiments of Leopold have shown that the ovum given off by one ovary may enter the tube of the other side. The cases are not so rare in which the tube of one side was closed or absent, and although the corpus luteum verum was found in the ovary of the same side, yet the ovum was found in the uterus. Schröder, Koblanck, and others have found a pregnancy in a rudimentary horn between which and the uterus no epithelial connection existed. Manierre has collected 39 cases of pregnancy in rudimentary horns. The same is true of those cases in which the corpus luteum verum is on one side and the ovum has developed in the horn of a uterus unicornis of the opposite side. Küstner removed a right-sided extra-uterine gestation sac and left-sided ovarian cyst shortly after a uterine pregnancy took place.

External migration occurs frequently in tubal gestation.—Although Küstner took note of the frequency of this event in only the last 25 of a series of 100 cases, it proves to have taken place in seven. Prochownik found that external migration had taken place in one case of eight which he had examined closely. Martin found the corpus luteum on the same side as the tubal gestation in 37 cases, on the opposite side in four, and uncertain in 36.

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*Read before the Obstetric Section of the Academy of Medicine, October, 1901.

External migration of the ovum has been viewed by Sippel and others as the etiological factor. They believe that the ovum in its migration becomes too large to permit of its passage through the tube lumen. The examinations of Peters, and especially of v. Spee, however, show conclusively that no chorionic villi are present until the ovum has been nourished for a considerable time by the decidua in which it is embedded. In addition, the Graafian follicle is in the majority of instances found in the ovary of the affected side, so that such an etiology would explain only the smaller number of cases.

This migration, however, calls our attention to the presence of a pathological condition in the mucous membrane of the opposite non-pregnant tube. While it calls our attention to the fact that the other tube is affected it only proves that it is more affected than the tube in which the ovum is finally embedded, for some cilia must be present in the latter to influence the external migration of the ovum. Various experiments make it seem probable that in the perfectly normal tube no ovum can develop.

Küstner, in his experiments on rabbits, extirpated one ovary and extirpated or tied off the uterine horn of the other side. In these attempts no extra-uterine gestation resulted. However, since such a pathological point of development of the ovum does occur in animals, a satisfactory explanation of the failure of these attempts could not be found until the experiments of Mandl and Schmit were published. In their work upon animals they found the following to be the case: After coitus, and after the lapse of time sufficient to permit union between the ovum and the spermatoza at the abdominal end of the tube, they tied off the tube at the uterine end. Their results were negative. No tubal gestation resulted. When, however, the uterine horn was tied off a pregnancy in this horn resulted, showing that the ligation was not the disturbing factor and that in all probability ova do not develop on a normal tubal mucosa.

In considering the history of those cases which have been closely noted it is found that ectopic gestation occurs most frequently in multiparæ and that a sterile period of varying length precedes this pathological development. Martin found that 65 multiparæ were affected as compared with 20 nulliparæ. In a series of 100 cases of Küstner's only 10 ectopic gestations occurred in nulliparæ. The other 87 had borne children and 3 had aborted. In 24 cases it occurred five or more years after the last labor; in 55 cases, from one to five years after; and in eight, in less than twelve months. Veit found that in 52 cases of *repeated ectopic gestation* a sterile period of two to eleven years preceded the occurrence of this process. Between the two events was a period of six weeks to six years. This sterile period represents the time in which inflammatory changes in the mucosa may occur, either gonorrheal, puerperal, or tubercular. These changes naturally involve the uterine end of the tube more than the abdominal, and in the subsequent course of events, when healing does result, the uterine end improves slowly. What are, then, the pathological changes in the tubal mucosa which stand in an etiological relation to ectopic gestation?

In a series of eight closely examined cases Prochownik found a gonorrheal history three times; in one of these cases there was an acute gonorrheal affection of the pregnant tube. Moskowicz found that of two cases tuberculosis was the etiological factor in one, and that in the other gonococci and staphylococci were present in the pyosalpinx of the non-pregnant tube. Median to the ovum Veit found microscopical changes which represent the results of pus inflammation. In two cases Dührssen found cilia abdominal to the ovum, but none toward the uterine end. Küstner observed very frequently a hemorrhagic tendency in the non-affected tube, showing that tube at least to have been abnormal. I found in three cases distinct changes from the normal in the mucosa median to the ovum.

Franz makes inflammatory changes in the tubes responsible for the occurrence of ectopic gestation. This is the more probable since inflammatory processes are so frequently found in the other tube. Franz found such changes in 80 per cent. of these cases in which a sterile period of two to seventeen years was noted. In cases where a sterile period of less than two years was observed tubal changes of the other side were present in only 53 per cent. He comes to the conclusion that we must seek the etiology in those affections of the tubes which have run their course, and which, having for a long time prevented the moving of the ovum have permitted a gradual and partial restoration to normal conditions.

While in a certain number of cases no pathological microscopic changes are found in the tubal mucosa, it may be explained by the fact that so-called catarrhal conditions frequently show little microscopical change. Even during or after gonorrhea the tube may seem microscopically fairly normal. Ahlfeld, in an experience of many years at the University of Marburg, met with so few cases of tubal gestation that he considers the relative freedom of his patients from gonorrhea, as compared with those in the larger cities, to be the only explanation.

Various inflammatory influences are etiological factors in that they destroy the cilia in whole or in part or diminish their functional activity. Besides, from the experiments made on animals we know that absence or early atrophy of the ovaries influences the muscular development and the functional activity of the uterine wall, the structure of the mucous membrane and the activity of the cilia. In cases of malsecretion or of functional interference with the secretion of the ovary, or in the atrophy subsequent to labor, or as the result of lactation, or of constitutional disturbances, or of failures of development, the activity of the cilia is diminished.

Naturally, there must be activity to a certain extent on the part of the cilia, especially at the abdominal end of the tube, for extra-uterine gestation occurs most frequently in the isthmus tubæ. Prochownik found an ampullar location in only three cases out of 45. Mandl and Schmit found among 69 cases an ampullar situation in only 15. Dührssen found an isthmical location in all of his 29 patients. In the nine cases which I have examined closely the same is true. Although Mercier has collected 30 cases of interstitial gestation (with rupture), Leopold 10 cases of ovarian gestation (?), and although the growth of an ovum on the fimbriæ, as well as tubo-ovarian pregnancies, occurs, yet the vast majority are found near the uterine end of the tube.

A further proof may be found in the fact that recurrences of tubal gestation take place but rarely in the same tube. Patellani, in a tabulation of 36 cases found that first one tube and then the other was the seat of ectopic development. Veit, among 52 reported cases, found that it recurred only three times on the same side. An additional point of importance is the occurrence of tubal gestation in either tube at the same time, of which Gebhardt mentions nine cases. Further, Patellani has collected 37 instances of combined uterine and extra-uterine gestation—a practical proof of an affection of one tube, and certainly excluding external migration.

I believe that in the so-called sterile period gonorrheal, puerperal, tuberculous and atrophic changes take place. The interval of years between the last labor and the ectopic gestation, the fact that the location is generally in the middle area of the tube, the fact that repeated gestations are observed and rarely in the same tube, the occurrence of an ectopic gestation on both sides at the same time, and the frequency of external migration, together with the combination of extra and intra-uterine gestation, point certainly to an affection of one tube and probably, but to a lesser degree, of the other tube. The frequency with which, according to Küstner, a hemorrhagic tendency of the non-pregnant side occurs, as well as the microscopic discovery of catarrhal conditions, together with the history and the microscopical evidences of the presence of gonococci, point distinctly to a tubal affection. The observation of Dührssen, who found cilia abdominal to the placental site and none median to it, and Veit's observation of the presence of inflammation median to the ovum, as well as the theory of congenital and acquired atrophy of the tube, especially subsequent to labor, lead us at the present day to seek in the microscopical changes of the tubal mucosa, *i.e., injury to the cilia,* the etiological factor in tubal gestation.

127 East Sixty-first Street.

APPARENT FETAL SUBSTITUTION; MEDICO-LEGAL NOTE.*

BY ALLEN J. SMITH, M.D.,
OF GALVESTON, TEXAS.

In the fall of 1899, at the opening of the University of Texas, one of the members of the entering medical class brought to the writer a specimen supposed to be a human monstrosity as a contribution to the pathological collection of the school from his preceptor, a physician living in an interior village of the State. Accompanying the specimen (now No. 283 of the Pathological Collection) the student presented the following certificate, signed by his preceptor:

> "*To all whom it may concern:*
>
> "This is to certify that the fetus in Mr. ———'s [student presenting the specimen. A. J. S.] possession was delivered by a negro woman in confinement at full term, according to her statement, and that I attended her in confinement. "———, M.D."
>
> "———, Texas, Sept. 29, 1899."

For a number of reasons the writer prefers to leave blank the names of the signer and the student bringing the specimen, as well as the address of the donor, especially because the writer, having several times called the attention of the gentleman to the real character of the case, prefers to leave the disposition of the matter to his judgment without the influences which publicity might cause.

The supposed monster was contained in an ordinary jar, wrapped in paper when presented, and was not examined until some time later when, to the writer's surprise, the specimen proved to be the skinned body of a kitten, measuring 19½ centimeters from the end of the hind legs to the tip of the nose, and weighing 140 grams. The body had been skinned with little care, and here and there were found adherent to the exposed subcutaneous tissue and fascia a number of hairs, white and black, evidently from a furred animal. In removal of the skin the tail had been cut off, the lower end of the rectum severed and the latter protruded from the perineum for about a centimeter; the ear cartilages were cut away; the tip of the nose had been roughly removed; the lower jaw had been separated at the symphysis and the median portion of the right side cut off. Two teeth remained visible, one well protruding canine of the right lower jaw and a deciduous molar, probably the first, in the right upper jaw. From both upper and lower jaws in front the incisors had been pulled or broken, the sockets showing their former position. Some mangling of the alveolar ridge in other remaining portions of the jaws prevents the determination of the teeth or sockets in these parts. The foot pads had been removed, and most of the claws cut or pulled away; but on each front foot a single retractile claw in its sheath remained, and on all the feet except the left hind one, one or more of the sheathed phalanges remained. The general appearance of the specimen, the hairs, and the type of teeth and claws clearly indicated its feline character. The size of the animal, the fact that the eyelids of the left eye, which had not been cut away, although on the opposite side the eye had been left quite bare of lids, were entirely separated, the appearance of a distinct umbilical scar, and the presence of food remnants (especially some vegetable matter) clearly recognizable by the microscope in the material pressed out of the severed rectum, showed that it had lived probably a number of weeks. The interior of the body and the contained viscera were not examined, as the writer preferred to keep the specimen intact for obvious reasons, inasmuch as the external parts clearly indicated its nature.

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*From the Pathological Laboratory of the University of Texas, 1902, No. 4.

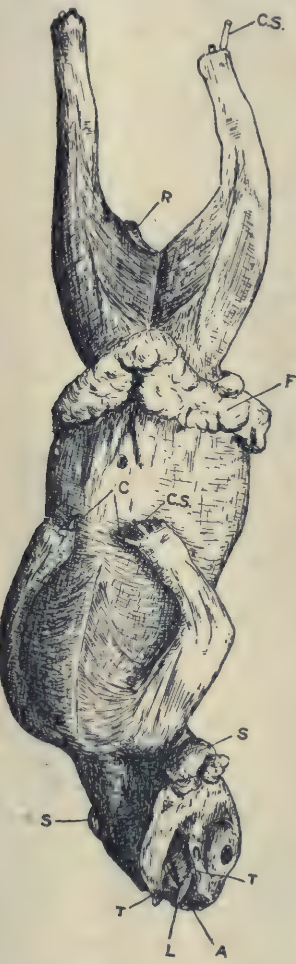

Fig. 1.—Skinned kitten. A, alveolar process from which incisors have been removed; C, retractile claws; C.S., phalanges with claw sheaths more or less entire, claws missing; F, fat of subcutaneous tissue; L, tongue; R, rectum; S, salivary glands with attached fat tissue; T, tooth.

As related by the student bringing the specimen to the school, his preceptor having been called to attend the negro woman in confinement repaired to her home for the purpose, but upon his arrival was informed that labor was complete, that the offspring, which was said to have been born at term, was a monstrosity and was dead. In the bed where the woman lay, in the midst of blood and what seemed to be the fetal adnexæ he found the specimen, apparently separated from the cord by the attendant. After attending to the cleansing and dressing of the woman the physician left, carrying with him the supposed monster, later sending it as above narrated to Galveston. The writer has addressed several letters to him, asking for further details of the incident and calling attention to the legal aspect of the case; but has received no reply. He has been assured by the student that the specimen was sent in good faith and that its nature was not appreciated until the examination here, but the latter has been unable to add further particulars.

The question therefore at present rests—with little probability of near solution, the writer fears—in these lines: Was a child born for whose body or living person the body of the kitten was substituted? If a case of substitution, what motive for the substitution existed and what disposition was made of the child? Or was the whole affair a hoax, the result of a hysterical pretense or of a practical joke? A somewhat similar case in which the body of a puppy was substituted for that of a newly born infant was recently related to the writer as having been perpetrated in connection with Voodooism among some ignorant negroes. The possibility of crime in such a case is of course its most serious feature; and the writer does not wish to evade that measure of responsibility which the acquirement of the above knowledge imposes upon him as a citizen. Without knowledge, however, of the identity of the persons concerned, it is impossible to proceed without professional and perhaps personal offense to those more closely connected with the original incident; and even though considerable time has elapsed, the writer is unwilling to believe that with the above information in his hands the attending physician will not, when he has satisfied himself of the real nature of the act, take such provisions as will preserve the majesty of the law.

THE ELECTIVE SYSTEM IN MEDICAL SCHOOLS.

BY DANIEL N. EISENDRATH, A.B., M.D.,
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THE curriculum of the modern and progressive medical school has become a very complex structure. Not many years ago a few months of service in a preceptor's office followed by two terms at a medical college, rarely exceeding five months each in duration, were all that was required of the student before receiving his degree. Obstetrics, clinical medicine, and surgery were taught him in the same semester with the so-called fundamental branches, such as anatomy, chemistry and physiology.

The introduction of the graded system and the lengthening of the school term to three years of six months each, had scarcely been made when the rapid development of all departments of medicine necessitated further extension. At the present time every college in good standing in this country requires four terms or years of nine months each.

In the past few years many changes have taken place in the curriculum. The tendency had been to arrange the courses in such a manner that the student began his practical work in his third or junior year. The first two years were devoted to the laboratory subjects, anatomy, physiology, chemistry, pharmacology and pathology. In many of the schools, especially in this college, there has been a feeling that the last two years were so crowded with clinical work that it would be well to begin some of it in the earlier years. This movement has been extremely successful and our clinics to the freshman and sophomore classes are but the foretaste of a more extensive introduction of instruction in clinical methods and direct contact with clinical material in these years.

The higher a college can make its preliminary requirements, the better prepared in the branches ordinarily taught in the first two years will its students be when they enter. Hence, more practical work can be given them earlier in their medical course than hitherto.

In the same manner in which medical schools were compelled to devote more and more time to the laboratory branches, so the rapidly increasing demands which modern practice makes of the physician have necessitated a change in the more practical years. Even an introduction of some of the clinical work into the first two years will not suffice. We must either add another year to the curriculum or give the student more latitude in the selection of his work in the last two years.

When classes in a medical school averaged 50 students, a small amphitheater, in which nearly every one was close to the clinician sufficed. In our larger classes, varying in number from 150 to 250, a different problem presents itself.

In order to equip himself to meet the keen competition of practice, it is necessary for the student to come in close personal relation with the teacher and patient. The time has passed when large amphitheater clinics are profitable to the student. Clinical conferences at the bedside, and in the clinic room where a small number of students can by direct examination of the patient and by the use of every modern diagnostic means receive inspiration from an enthusiastic teacher, must become the method of teaching in the future. Didactic lectures and recitations for small classes (not exceeding 50) will still be of great service.

How can the ambitious student get the best results from his last two years? By permitting him to select to a great extent the work which he wishes to do. He should not be compelled to sit in crowded clinic and lecture rooms for nine or ten hours daily, jumping from a lecture on surgery to one on dermatology and again to one on medicine, to be followed by a view, at a distance of 100 feet, of a case of tabes.

By giving him the privilege of selecting to a certain extent his teachers and subjects, there will be a reciprocal benefit. If a student is required to take a minimum amount of work so as to conform to the State laws, he can so arrange his time that under proper supervision he will choose those courses which tend to develop his mind symmetrically. There will be no overcrowding and resultant confusion of ideas through being compelled, as at present, to attend every lecture or clinic no matter by whom it is given.

He can select his work at the beginning of each term so that there is a certain sequence or relation of the subjects taken up. With the present multiplicity of branches taught in a modern medical school and the increase in number of teachers each of whom demands some fraction of the student's time, it is absolutely necessary to call a halt. If we do not permit the introduction of the elective system we will graduate automatons and not thinking physicians, men and women who can describe locomotor ataxia, a greenstick fracture or an enlarged spleen perfectly, but who have never educated their fingers or eyes sufficiently to recognize one in practice.

What is the reciprocal benefit, that is, to the teacher? The elective system is the best stimulus for a medical instructor, be he a professor or mere associate, which ever existed. The writer has been informed that its introduction at some schools has been followed by a marvelous waking-up of those who, through being accustomed for many years to have a compulsory attendance, began to grow negligent in their teaching methods and to lose interest in their clinical work. A short season of small voluntary attendance caused some reflection. The result was that it stimulated to better and more painstaking work with very happy results. Students are severe critics and can form an estimate of the ability of a teacher rapidly. Give them their choice and the better instructor will have a large enrollment, the poor one none.

Another benefit to be derived from the elective system is that it gives a college a better opportunity to utilize clinical facilities outside of its own walls. If the student feels that he can get credit for work done in extramural clinics just the same as if done in the college building, he will take advantage of many clinical facilities which are at the present time mere figureheads for advertising purposes with many colleges. In most of these extramural institutions there is an almost inconceivable wealth of clinical material wasted and good teachers undiscovered for lack of opportunity.

The elective system is no longer an experiment. Its success has been proven and its general adoption is a step in the lines of progress.

In the crowded condition of the present medical curriculum and the necessity of graduating thinking, practical young men and women, the elective system must ultimately be adopted by every college. It will best dispose of the problem of large classes and of more direct contact between student, teacher and patient.

THE SYMPTOMATOLOGY OF TABES: AN ANALYSIS OF 140 CASES OF LOCOMOTOR ATAXIA.

BY JOSEPH COLLINS, M.D.,
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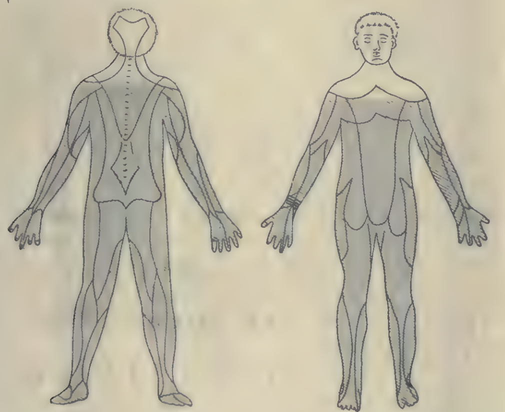
(Continued from Page 459.)

Diagrams to illustrate disturbance of tactile sensibility in a few cases are reproduced here:

Analgesia.—Analgesia was noted in 58 per cent. of the cases. In its distribution it was not unlike anesthesia except that it was seen relatively oftener in the arms; lower extremities, 41; upper extremities, 30; trunk alone, 5; face and head, 6. Analgesia in the domains of the ulnar and peroneal nerves is common in tabes. In my experience it is found oftener in these two localities than anywhere else. Ulnar analgesia was noted 34 times and peroneal analgesia 43 times. In many of these cases is was present in both areas. A zone of analgesia over the upper part of the chest is rather common in tabes. I found it in 53 cases, 38 per cent. Exaltation of the pain-sensibility, especially at the borders of the analgesic zone, was found astonishingly often. Analgesia of the face and head was noted in a small proportion of the cases, viz. 6.

Fig. 4.

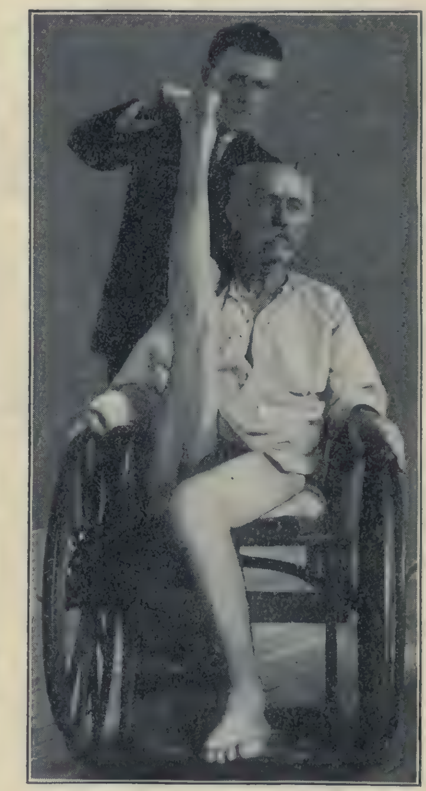


Patient cannot distinguish head from point of pin over shaded areas. Cannot feel cotton wool brush.

Biernacki's sign, absence of pain and tingling in the distribution of the ulnar nerve, when the trunk of the nerve is pinched and compressed as it crosses the olecranon fossa, was noted in 18 out of the 42 (43 per cent.) last cases in which it was investigated. More or less insensitiveness of the testicle was noted in 21 instances. I have no records to show how often the sensitiveness of the testicle to pressure was tested. I refrain from giving any percentage for this symptom. I am inclined to believe, however, that it is found in some degree in at least one-third the cases. Sensitiveness of the female breast varies very much with the individual and with the age of the patient. I have found some degree of sensitiveness in five cases, 31 per cent. (Two additional female tabics have been seen since the publication of Part I of this article.)

Pitres has called attention to the fact that profound epigastric analgesia is a symptom of frequent occurrence in tabes, having found it in about 50 per cent. of his cases. Although I have not given this point especial attention, save during the past year, my experience so far has not been corroborative of this statement.

Fig. 5.



To illustrate hypotonia in a tabetic.

Disturbance of thermal sensibility was noted a number of times, especially in patients seen in private practice. Some degree of increased sensibility to cold existed in 20 of the 54 patients, 37 per cent. In many of these contact of cold water on one or another part of the body was painful. It has not been noted that there was thermo-anesthesia or analgesia for heat in any of my cases.

The Deep Sensilibity (muscular and articular sense).—The deep sensibility was unfortunately not investigated in all of the cases. In the cases in which the observations were made the ordinary tests were used: Weighting objects in the hand, estimating the position of the extremities, and interpreting passive movements with closed eyes. The deep sensibility of the lower extremities was impaired in 35 cases, the upper in 11, the lower and upper in 13. In the 73 cases in which I can be sure the muscular sense was tested impairment of it was noted in 63 per cent. of the cases.

Hypotonia.—Careful examination into the tonus of the muscles was made only in the 57 recent cases. In those some degree of hypotonus was found in 41 instances, 72 per cent. As a rule it was found in a much more advanced degree in patients in which the disease had existed for a protracted time. In some cases it was comparatively slight, *i.e.*, the leg extended on the thigh could only be brought to a little less than a right angle with the body, the patient lying flat on the back. In other instances it could be approximated to the shoulder. A fairly illustrative degree of hypotonia of the lower extremities is depicted in Fig. 5.

Motor Phenomena of Tabes.—Although the motor symptoms are the ones from which the disease takes its common name they are rarely the conspicuous symptoms in the early stages of the disease. As a matter of fact the disease may exist for many years without causing noticeable motor impairment. Ataxia develops sooner or later if the patient lives long enough in every instance. The fact that ataxia is absent in not a few cases makes it difficult for patients to comprehend that they have locomotor ataxia. This inability to grasp the situation is by no means confined to the layman. For instance, a physician in whom the diagnosis of tabes was made in 1895, writing to me seven years later, says: "Insomnia and lightning pains are the leading symptoms still; there is no ataxia yet, and therefore locomotor ataxia is an improper designation for my case." Literally speaking, what he says is true, but locomotor ataxia used to designate a disease does not signify that ataxia of locomotion is necessarily an accompaniment of this disease any more than the man whose name is Joseph has a coat of many colors.

Ataxia of Gait.—Ataxia of gait was present in 102 cases, 73 per cent. In 23 cases the ataxia of gait was not present when the patient was first examined. It developed, however, in the majority of them while they were under observation, or it was present when they were encountered later in hospitals or at my clinic. If these cases were not included the proportion would be reduced to 56.5 per cent.

In the majority of cases ataxia of gait was first brought to the patient's notice when crossing crowded thoroughfares, walking in a narrow space or going downstairs. The latter (signe d'escalier of the French writers) was noted specifically in 63 cases. Ataxia of gait was extremely slow to develop in a few cases. In one patient it was so remarkable that it deserves to be quoted. (See history of case to illustrate *slow* tabes on page 493.)

Romberg symptom was noted in 117 cases, 85 per cent. In 14 of these it developed while the patient was under observation. v. Sarbo found Romberg symptom in 93 per cent. of his cases, and he remarks that this is a greater percentage than that of most writers. The explanation is that others do not classify as "Romberg symptom" the slight, swaying, that he does.

Ataxia of the upper extremities was noted in 48 cases, *i. e.*, about 34 per cent. In some cases it was very slight and in a very considerable number of cases it developed while the patient was under observation. This finding is in marked contrast with the findings of many other recent statisticians of this subject. Bramwell observed it in 25 per cent., Thomas in 12 per cent., Bonar in 8 per cent, Riley in 24.5 per cent., Leimbach in 4 per cent. only.

The explanation of the relatively great frequency with which I found it must, I think, be sought in the fact that many of my patients have been under more or less continual observation for a number of years. For instance, the majority of the very considerable number of tabic patients now in the Alms House Hospital of this city were for a number of years under my eye in the Hospital for Nervous Diseases to which I was visiting physician.

The accession of ataxia was sudden in 10 per cent. of all the cases. Patients may have had symptoms such as pain, paresthesia, vesical and sexual weakness, etc., for a variable time, but no ataxia, and then have the ataxia set in abruptly. This is extremely well illustrated by the following case, in which the ataxia not only came on in the lower extremities (its customary place of manifestation), but in the upper extremities and face as well. M. R., a cook thirty-seven years old, denies syphilis. Seen October 3, 1899. For ten years he has had pains and feeling of tension of the skin and for five years burning, shooting pains in legs and arms. In 1897 he suddenly became unable to walk, unable to use the hands to button his clothes, to carry food to the mouth, etc., and unable to articulate distinctly. This condition lasted for three months and then gradually he recovered the capacity to coördinate purposeful movements. Examination shows the typical objective features of the disease, pupillary and sensory manifestations, ataxia, hypotonia absent, knee-jerks and vesical weakness.

I have observed a condition comparatively similar to this in quite a number of cases, and as a result I venture to say that in every case in which ataxia develops more or less suddenly and becomes of very great severity early in the course of the disease that this ataxia will improve without or with treatment in almost every instance, so that the patient will again be able to get about with much satisfaction. This can be no better illustrated than by the following case, which seems to have developed with remarkable suddenness. C. S., fifty-five years old, a pole climber, denies syphilitic infection. Seen for the first time on February 18, 1901. He says that on October The gate is very ataxic and he cannot walk with- that his legs were heavy and unwieldy and the seat of a sensation as if they were asleep. The previous day had been inclement and he was at his work. When he got up and walked about his gait was uncertain, and he says he staggered as if he had been drinking. He noticed also a sensation as if an iron band had been fastened about the waist. Two weeks later he was unable to walk, he says, because of weakness of the legs, but from his description I infer that it was very profound incoördination. At this time incontinence of urine developed and he complained of lightning-like pains, of diplopia, of giving way of the knees whenever he tried to put his feet under him. Since that time he has learned to walk with the aid of sticks and crutches, but his symptoms remain about the same. Examination shows profound hypotonia, of the lower extremities especially. When he stands the knees are bowed backward. Both feet can be put on the back of the neck with the knees extended. He says that he has lately become a "rubber man." The gait is very ataxiac and he cannot walk without being steadied. The knee- and ankle-jerks are absent. The plantar and abdominal reflex present; the cremaster is absent. The pupils are equal, not responsive to light, but respond promptly in accommodation. There is well marked anesthesia over both external popliteal nerves and over the feet about the knees, and tactile sensibility is very much delayed. Above the knees sensibility is fairly normal.

While in the hospital this patient developed pulmonary tuberculosis.

Sudden and Slow Onset of Tabes Contrasted.—The following case is quoted as an example of the sudden onset of tabes and to illustrate the manner in which some patients describe the beginning of their disease: A. G., a barber, forty-nine years old; infected with syphilis when nineteen. He says that he has had three "paralytic strokes." The first one five years ago that "lamed" the bladder; the second attack three years ago that "lamed" the left eye. The last attack "lamed" the right leg and right arm. This came on "over night" about six months ago. This story being interpreted means that when he was forty-four years old (*i.e.*, twenty-five years after the syphilitic infection) he began to complain of inability to pass water and soon this was of such severity that it was necessary to resort to the catheter. Since that time there has been incontinence of urine with occasional retention. Since this time he has been wholly impotent. Two years later diplopia developed, and soon afterward the ptosis of the left eyelid. This lasted for about eight weeks and then disappeared gradually. Occasionally he has seen double since then, but not often. The next symptom to develop was giving way of the knees. He had fallen a number of times without attributable cause. He then first noticed some difficulty in going down stairs and on walking in the dark, but no attention was paid to the ataxic symptoms until they became so profound in the arms and in the legs that he was unable to work. Although he maintains that it was greater in the right side than in the left, it was not in reality, it merely appeared so to him, as he could not use the razor or scissors with the right hand. It is not necessary to enumerate the physical signs. The objective signs in this case were absolutely typical, and in addition there was well marked optic atrophy of the left eye. At the present time the patient is bedridden. Ataxia and hypotonia are most profound.

As an example of tabes which seemed to have come on suddenly, but which in reality had existed for a considerable time, making itself evident only in symptoms that could be revealed objectively, the following case may be cited: A rabbi, thirty-five years old, denies syphilitic infection and dates the beginning of his illness back about one month. The order in which the symptoms developed was as follows: (1) Weariness of the legs; (2) unsteadiness of gait; (3) dimness of vision; (4) difficulty in mounting and dismounting stairs; (5) giving way of the knees; (6) slight unsteadiness of gait and station, particularly when he had been observed when standing on the platform, such as walking to and fro, and standing upon a platform; (7) no symptoms referable to the urogenital sphere, and no pain. He says that some months ago he noticed that the left ocular aperture was smaller than the right, although at times he has had some diplopia. Examination reveals irregular, unequal pupils, the left larger than the right, both displaying typical Argyll-Robertson phenomena; vision $^{20}/_{20}$; there is slight hyperoptic astigmatism; paresis of both external recti, the left more profound than the right. The ocular fields and the fundi are normal. The knee-jerks and ankle-jerks are absent. The plantar, cremaster and abdominal reflexes are normal. There is well marked ataxia of station and of gait; there is no ataxia of the upper extremities. There are no sensory disturbances; hypotonia is fairly well marked. There are no trophic or vasomotor phenomena. The pulse is 94, and the heart sounds are free from murmurs.

In sharp contrast to these the following case of *slow tabes* may be cited: M. N., fifty-nine years old; syphilitic infection in 1868; five years afterward he first began to complain of shooting pains in the legs. At this time he was under the care of the late Dr. E. C. Seguin, who made the diagnosis of tabes. The symptoms that he recalls to have been present at that time in addition to the pains, were diplopia and rotation outward of the left eye and girdle sensation. We have no information as to what the physical signs at that time were. He first came to the Clinic at the Post-Graduate Hospital about 13 years ago. The notes of the examination were made in 1899, *i.e.*, about 25 years after the disease had first been diagnosticated.[*] His complaint at that time was of profound unsteadiness of gait which had developed one month before, of difficulty in retaining the urine, and of progressively failing eyesight. Examination showed ataxia of station, gait and the upper and lower extremities; absent tendon-jerks; widely dilated pupils without response to light, profound hypotonia; and extensive areas of anesthesia and analgesia of the trunk and of the extremities. There is no optic atrophy present.

In contrast with these cases, in which the ataxia develops (1) rapidly, (2) slowly, we occasionally encounter cases in which the ataxia has been profound for a more or less protracted time, then gradually grows less and practically disappears; but the objective accompaniments of tabes remain.

As an example of such a case the following history may be cited: Mrs. X., thirty years old, an actress, began to complain of numbness of the legs, especially when lying, and a sensation as if the clothes were all too tight and heavy when about twenty-six years old. About a year later she first complained of unsteadiness when walking across the stage. When she came near the footlights she was afraid of falling over, and when walking along a curb in the street she would have similar fear. About this time she began to complain of pain, sharp shooting pain, as if a knife or several long pins had been thrust into the thighs and legs. Before this she had had some difficulty in retaining the urine, but since then the trouble has been to start the stream, at times it seemed to be quite impossible. During the last year she has lost sexual desire, and cohabitation is never attended with orgasm. Occasionally the head is the seat of a queer numb sensation which she cannot well describe. Her principal complaint at the time when I first saw her in December, 1897, was of numbness in the lower extremities, inability to control them, especially the right extremity, when standing and walking, inability to walk unaided, except at home where she has a clear space, of retention and incontinence of urine and of occasional attacks of severe pain. Examination shows extreme ataxia of station and gait, loss of the tendon-jerks at the knee, ankle and elbow; marked hypotonia; normal response of the plantar and epigastric reflexes; analgesia of the entire surface of the lower extremities and trunk extending up as far as the third rib, and diminished tactile sensibility over the same area, but the hypesthesia is very trifling compared with the analgesia. The pupils react to light promptly and in accommodation.

The patient recovered so completely from the ataxia that she was able to resume her work on the stage, which necessitated dancing. She has been practically free from ataxia for four years. Examination reveals unequivocal signs of tabes.

The Tendon-jerks in Tabes.—The condition of the tendon-jerks in this series was as follows:

(1) KNEE-JERKS.

	Cases.	or Per Cent. of 140 Cases.
Absent	118	84.3
Normal	6	4.3
Sluggish, *i.e.*, elicited only on reinforcement	8	5.7
Present on one side, sluggish or absent on the other	8	5.7

Among the 118 cases in which the knee-jerk is stated to be absent, in ten the knee-jerk disappeared while the patient was under observation, *i.e.*, when the history was taken both knee-jerks were present, or one was present and the other absent. If to these 118 cases the 14 cases, in which the knee-jerk was sluggish are added, and very properly they should be, for it is only a question of time when they will completely disappear, the percentage of cases in which the knee-jerk is lost in tabes would be 94.4 per cent. If, on the other hand, these and the ten cases of tabes in which the jerks disappeared while under observation are subtracted from the entire number, the percentage will be reduced to 77 per cent., and these figures may be taken as representing the average condition of the knee-jerks in all of the cases of tabes, *i.e.*, cases of initial tabes at the end of the preataxic stage, and the cases of well-marked tabes. Of the eight cases in which the knee-jerks were present, in two the jerk was exaggerated. There is no question, I believe, of the correctness of the diagnosis, but it may be said that in both cases it was corroborated by another neurologist. One of the patients was at the very onset of the disease, his initial symptoms having been nocturnal incontinence of urine, occasional rheumatic pains, diplopia, and later unilateral third nerve paralysis which disappeared after a few weeks. The second case may be put in the category of those cases that I described as the neuralgic type.

(2) ACHILLES-JERKS. (EXAMINED IN 121 INSTANCES.)

	Cases.	or Per Cent. of 140 Cases.
Absent	107	88
Sluggish, *i.e.*, elicited only on reinforcement	7	5.8
Present on one side only	3	2.4
Normal	4	3.3

Thus it will be seen that the absence of the Achilles-jerk was noted in a greater percentage of cases than the knee-jerk.

In one case of undoubted tabes the Achilles-jerks were absent, the knee-jerks present; in two cases the knee-jerks were elicitable but sluggish on the left side, absent on the right. A similar statement applies to the Achilles-jerk. In one case both Achilles-jerks were absent, the knee-jerk sluggish on one side and absent on the other. v. Sarbo found the Achilles-jerk present eight times out of 92 cases, *i.e.*, absent in 91 per cent. of the cases, which figures correspond closely with mine.

(3) ELBOW-JERK.

	Cases.	or Per Cent. of 140 Cases.
Absent	19	13.5
Present	23	16.4
Exaggerated	2	1.5
Not noted	96	6.8

The elbow-jerk was absent in 43 per cent. of the cases, in which it is recorded that the test was made.

One of the cases in which the elbow-jerk was exaggerated was the first one mentioned above.

Cutaneous reflexes:

(1) PLANTAR REFLEX.

	Cases.	or Per Cent. of 140 Cases.
Exaggerated, lively	27	20
Absent	12	8
Present on one side only	1	
Diminished	6	4
Slow response	3	4
Normal jerk	32	23
Not noted	59	

The plantar reflex was normal or above normal in 59 out of 71 cases, in which it is recorded that the test was made, or 83 per cent.

(2) CREMASTER.

	Cases.	or Per Cent. of 140 Cases.
Absent	8	6
Sluggish	4	3
Absent on one side, present on the other	2	1.5
Exaggerated, lively	11	8
Normal	32	23
Not noted	83	

The cremasteric-jerk was therefore lively or normal in 43 cases out of 53, *i.e.*, 81 per cent.

(3) ABDOMINAL.

	Cases.	or Per Cent. of 140 Cases.
Absent	9	7
Upper lively, lower absent	3	1.5
Sluggish	5	3
Exaggerated	12	8
Normal	34	24
Not noted	77	

Normal or lively in 34 cases out of 58, *i.e.*, 60 per cent.; exaggerated in 20 per cent.

In two instances the behavior of the plantar reflexes was such as to make it worthy of note. In the first case a woman, thirty-two years old, claims that her disease originated from getting thrown to the floor of a trolley car in collision. She has the most classical picture of tabes. None of the pathognomonic subjective or objective symptoms is lacking. The plantar reflex is elicitable, but it shows a remarkable variation from normal. After striking or scratching the sole of the foot, from five to eight seconds elapse, then the foot, leg and thigh are thrown into a clonic state. After a variable number of clonic twitchings, from three to six, the leg extends and then relaxes and the foot assumes its normal position. This condition is to be elicited on either foot, but on the right (the one in which the ataxia is most marked) more than the left. A heavy scratch along the sole produces a more vigorous clonic state of the lower extremity than a light one, but always five seconds or more elapse before the movement occurs. Bramwell in a recent article in *Brain* (Spring, 1902), records a similar example. In a second instance, a cleric, later an actor, who had an extragenital syphilitic infection and who developed typical manifestations of tabes, including perforating ulcer and arthropathy manifested a condition somewhat similar to that in the case described above except that the clonic spasm was not so violent. In this instance an interval from two to four seconds elapsed between the scratch on the sole of the foot and the remaining reflex. It may be a mere coincidence, though I am inclined to think not, that both of these patients had been injured in trolley car accidents, and both had suits for damages against the company. In a number of other cases the reflexes were exaggerated, but in none comparable to the above two.

Big-Toe Phenomenon.—It was noted in the histories in forty-one instances that the test had been made for the big-toe reflex (Babinski phenomena), but in no case was it found.

The Pupillary Phenomena of Tabes.—The pupils were unequal in 32 cases, *i.e.*, in about 23 per cent. of all the cases. Inequality of the pupils was probably not noted in cases in which it was very slight. Excluding such instances the frequency of inequality of the pupils would seem to be 25 per cent. Irregularity of the pupil was noted eight times, *i.e.*, 6 per cent. I none of these cases it was not at all easy to decide whether the disease was tabes or cerebrospinal syphilis. The size of the pupil was noted in 94 instances. Of these 36 were classed as pin-point, 27 as small, 6 as dilated, and 25 as medium or normal-sized. In 63 cases, *i.e.*, in 45 per cent., the pupils were small and the majority of these were extremely myotic. Mydriasis was a very uncommon finding (5 per cent.), and when found it was nearly always associated with irregularity of the pupils. In 101 of the 140 patients, the pupils did not contract on exposure to light. That is, there was loss of the light-reflex in 72 per cent. of the cases. In 15 additional patients the pupils were sluggish in one or both eyes and were evidently on the way to complete loss of the pupil-reflex to light. If these cases are added to the 101 mentioned above, and properly they should be, the percentage of cases in which the pupillary light-reflex was lost is about 80. In seven of the cases in which the records show that the light-reflex of the pupil was present when the patient was first examined, the typical Argyll-Robertson phenomena developed while the patient was under observation or before he was encountered in another hospital. It is very uncommon for the pupils to lose their capacity to contract in accommodation in tabes, but occasionally it is lost. In my cases it was noted that the pupils did not contract in accommodation in nine instances.

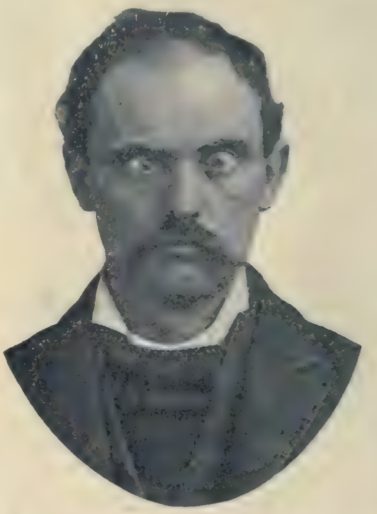
The characteristic pupillary phenomena of tabes is loss of contractility of the pupil on exposure to light, associated with preservation of the pupil-contractility in accommodation and is universally known as the Argyll-Robertson pupil. Its value as one of the most important and reliable diagnostic signs of tabes is universally recognized. In 97 of my cases it existed in typical form when the patients were first examined, in four cases it existed, but in not typical form, *i.e.*, loss of or sluggish light-reflex in one or both eyes and in six it developed while the patient was under observation. In other words, it was a sign of the disease in 77 per cent. of all the cases. The frequency of the Argyll-Robertson pupil in the experience of some recent writers, is as follows: Bramwell, 72 per cent.; Leimbach, 84 per cent.; Bonar, 71 per cent., and Thomas, 63 per cent.

Ocular Palsies.—Diplopia was noted as having occurred 32 times, 22 per cent. In the majority of these instances it was comparatively an early symptom and intermittent in its manifestation. In some instances it was said to have been worse in the morning, worse after attacks of indigestion, and after smoking, but it is probable that these had little relationship to it.

Paralysis of one or more of the extrinsic eye muscles is at times an early symptom of tabes. There was a history or evidences of paralysis of one or more of the eye muscles in 14 cases, 10 per cent. The third nerve was affected in seven instances, the third and sixth in two, the sixth in four, and the fourth and sixth in one. Some degree of ptosis was noted in seven other cases. In five of these it was unilateral, in two bilateral. Complex paralysis of the eye muscles occurred in two cases and one of these is quoted briefly above. Nystagmus like movements of the eyes in forced positions, such as looking to the right and to the left was noticed in 21 cases, *i.e.*, 15 per cent. It is worthy of comment in view of the fact that ocular palsies are stated in the text-books and in many monographs on tabes to be comparatively a frequent accompaniment of tabes, to emphasize here the fact that they occurred in only 15 per cent. of the cases, and unless very liberal interpretation is put upon the designation, ocular paralysis, *i.e.*, if the cases of mild ptosis are excluded, such palsies occurred only in 10 per cent. These figures agree very closely with Bramwell (*loc. cit.*) who found some form or other with ocular palsies in 16 per cent. of the 155 cases analyzed by him; and with those of v. Sarbo, 10.5 per cent.

As an example of a typical case with ocular palsies, the following history and photograph of a patient may be presented. J. M., thirty-two years old; syphilitic infection when seventeen years old, following first coitus. Duration of present symptoms two years. Initial symptom, difficulty in urination. Much voluntary force was necessary and in them the stream was very inadequate. Soon after this he noticed that everything that he looked at seemed to be at an angle, and he had to forego working at his trade. He was treated for astigmatism, but later when the ocular palsies became more evident he was put under large doses of iodide of potassium and improved somewhat. The following symptoms developed successively: A drawing, compressing sensation, "a miserable feeling" in the gums, around the throat and neck extending over the left shoulder and chest; sensation of numbness and loss of dexterity in the upper extremities, especially the fingers; failing sexual powers; short, sharp, shooting pains of brief duration; difficulty in locomotion which he attributes to the disturbance of eyesight and diplopia. Examination reveals ataxia of station, locomotion and of the upper extremities, all moderately well pronounced; the knee-jerks and Achilles-jerks are absent; there is a small area over the upper part of the chest and lower part of the neck in which tactile sensibility is blunted, but it does not amount to anesthesia. There is likewise an area of hypesthesia over the forehead. The voice is husky and vocalization is preceded by a prolonged audible inspiration. When this symptom first developed there was a whistling sound on inspiration, and he has had two or three attacks of a smothering sensation associated with great anxiety, in which most powerful efforts of inspiration are necessary. Examination with the laryngoscope shows a partial paralysis of the adductors of the vocal cords. Examination of the eyes shows practically normal vision with no impairment of accommodation or of the visual fields. The sensibility of the cornea and conjunctiva is reduced more in the right eye than the left. Motility of the eyes downward normal and reduced in every other direction. There are jerking, twitching movements of the eyeballs when they are put in extreme positions,

Fig. 6.



Paralysis of the sixth pair of nerves in a case of tabes of sudden onset.

except when they are rolled downward. The left eye can be abducted only to the median line. Torsion movement from action of the oblique are not noticeable. Pupils: the right is horizontal and of medium size, the left round and of medium size. Reaction to light is present to a very slight degree; reaction in accommodation is prompt. The fundi are normal. In brief, there is affection of (1) both ophthalmic divisions of the fifth nerves; (2) paralysis of the left external rectus muscles; (3) paresis of the other extrinsic muscles of both eyeballs; (4) Argyll-Robertson pupils.

This patient gave a fictitious address at the clinic, and unfortunately I have never been able to get track of him.

Gilles de La Tourette has described what he calls the tabetic eye. In many cases of tabes there is an expression about the eyes which suggests the diagnosis, but it is difficult to depict it verbally in just what this change consists. The expression is most pronounced in those cases in which there is a slight degree of ptosis and some ataxia of the eyeballs, and in those cases in which there is sensori-motor disorder.

In some cases there is a moderate degree of exophthalmos, slight retraction of the lids to enlarge the palpebral fissure and diminution of the tension of the eyeball (ocular hypotonia of Berger), which gives a characteristic appearance.

Optic Atrophy.—Optic atrophy was found in 19 of the 140 cases, or 14 per cent. The percentage of optic atrophy varies very much in different statistics. Leimbach gives 7 per cent.; Bonar, 8 per cent.; Thomas, 10 per cent.; Riley, 11 per cent.; Bramwell, 22 per cent.; v. Sarbo, 30.4 per cent. The latter writer believes that within five years after the onset of the tabes, decoloration of the optic nerves occur in the majority of cases, and that it may therefore be looked upon as an early symptom of tabes. I am inclined to believe that my figures underestimate rather than overestimate the frequency of affection of the optic nerves, still I do not agree with the last named writer regarding the importance as an early symptom. In many of the 140 cases constituting this series, especially those seen in dispensary and hospital, the records of ophthalmoscopic examination were not convincing, or they are entirely absent. In four of the 19 cases the optic atrophy was slight; in six the patients were totally blind; in two they were partially blind and their infirmity was increasing rapidly. In three of the remaining number the atrophy was distinctly to be made out, still the patients did not make special complaint of eyesight. In the four remaining cases the optic atrophy was slight. In four cases optic atrophy was the initial symptom of the disease. Of all the cases with optic atrophy, only one was referred to me by an ophthalmologist. This would indicate that optic atrophy was not present early. This experience is sharply in contrast with that of Starr (*Philadelphia Medical Journal,* June 3, 1899), who says: "In 25 of the 30 optic atrophy cases blindness was present many years before any other symptom of tabes, except loss of the knee-jerk, developed." In no case was there any evidence of optic neuritis. In three of the 19 cases in which optic atrophy existed, there was no ataxia at the time when the optic atrophy was very distinct, but in two of these cases that were continually under observation, ataxia developed.

In no case did the superimposition of blindness seem to have any effect upon the course of the disease. In three of the cases pain, paresthesia and crises continued to occur after the blindness had become complete. In one case, attacks of pain were of much greater severity after blindness, and the ataxia was more distinct. In another case pain was not a symptom of the disease until after the development of the optic atrophy.

My experience is therefore at variance with that of Dejerine and others who report cases of tabes in which the development of optic atrophy was contemporaneous with amelioration of tabes, and who speak of "tabes arrested by optic atrophy."

Bladder Symptoms.—Symptoms referable to the bladder are amongst the most constant of the symptoms of tabes. However, in my series such symptoms were noted only 78 times, *i.e.,* about 55 per cent. This percentage, relatively small, compared with the statistics of others, is probably the result of the fact that a considerable number of my cases were seen in the early stages of the disease, and although vesical symptoms are among the initial symptoms in from 10 to 20 per cent. of the cases, they usually did not attract the attention of the patient until after their more insistent symptoms have developed.

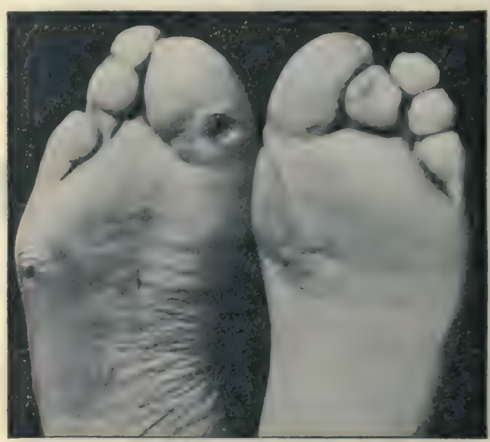
The vesical symptoms were divided as follows: (1) Slowness in starting the stream, necessity for bearing down and lack of vigorous expulsive force, 22 cases; (2) retention, periodic or constant, 21 cases; (3) incontinence, 26 cases; (4) hurried action of the sphincters, nine cases. There were in addition a few cases in which some interference with micturition followed exposure to intense cold, but these are not included, as this may occur in healthy persons. In five cases the patient had been under treatment by a surgeon for the incontinence or the retention which were looked upon as due to local conditions before they came under my observation. Case III. may be cited as an example of tabes in which the initial symptoms, and so far as that is concerned, the symptoms up to the present time, after the disease has lasted seven years, are referable to the bladder, as illustrative of this point.

Impotency.—Complete impotency was noted in 27 cases; partial impotency, *i. e.,* capacity for intercourse rarely and incomplete, and unsatisfactory efforts in 36 cases. In the majority of these impotency became complete. If to these figures there is added the result of inquiry on this point in female tabics, in which a condition akin to impotency was found five times out of 12 female patients, who could be interrogated intelligently on this topic, it will be seen that there was impairment of the sexual reflexes in 68 cases, *i.e.,* about 50 per cent. In three cases there was exaltation of sexual desire, accompanied with increased capacity. Two of these cases were seen early in the disease, and remained under observation sufficiently long enough for me to observe the disappearance of the symptom. In 12 cases indulgence in sexual intercourse was followed by disagreeable symptoms, feeling of prostration, neuralgic pains, sense of constriction in the rectum, desire to urinate, etc. It was recorded in 10 cases that the patient was still potent. In six of these the subjective and objective symptoms of the disease were well marked, the patients being distinctly in the ataxic stage of the disease. In two cases copulative capacity was regained after it had been lost for a protracted period.

Trophic Lesions of the Joint.—Arthropathies (*Charcot's Joint*). *Perforating Ulcer.*—Tabic arthropathy, the name applied to painless enlargement of the joints in tabes, was noted as having occurred seven times in my 140 cases, *i.e.,* about 5 per cent. This percentage is about the same as that given by Bramwell, by Thomas and by Marie (*Gazette Hebdomdaire de Medicine et de Chirurgie,* No. 20, 1892). In one additional case there was painless arthritis of the knee-joint, but this case is not included. The following joints were the seat of lesion in the seven cases: Ankle, hip, and thumb one each; metatarsophalangeal of the big toe, two; knee-joint, two. In two instances the enlargement of the joint was said to be the initial symptom, but close inquiry revealed the preexistence of symptoms which were undoubtedly due to tabes. In one patient, a pole-climber, the enlargement followed a trivial injury. All writers are in accord as to the great frequency with which the knee is affected. For instance, Flatow finds the knee to be the seat of the lesion in 60 of 140 cases. It is a well-known fact also that tabetic women are more liable to the disease than men. Weizsaecker reviewed 100 cases, 39 of which were women. In no case was there noted any enlargement of the muscles around the affected joint, such as Donath has spoken of (*Wiener klinische Rundschau,* Vol. XVI, No. 43, 1902) as having occurred in the muscles of the calf in a patient with arthropathy of the knee, nor any calcification of the tendon inserted around the involved joint. The time of the appearance of arthropathies in tabes is, however, very variable. In a review of 132 cases Kradel (Volkmann's Sammlung klinischer Vorträge, 1888) has shown that 21 cases occurred in the prodromal stage of tabes; 38 cases between the first and fifth year, 32 cases between the fifth and tenth year, and 41 cases after the tenth year.

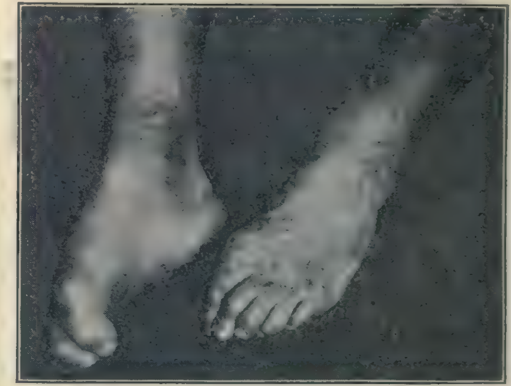
Trophic lesions of the skin and soft part were noted in 12 instances. One case had repeated attacks of urticaria. In two cases a herpetiform eruption developed on the buttocks. After lasting from one to two weeks the eruption would entirely disappear, leaving a red area corresponding to the seat of the eruption which would gradually grow smaller. One patient had lost the toes of the right foot. He said that he had a disease of them which was due to syphilis which necessitated their amputation. Whether or not the condition was gangrene due to syphilitic arteritis or not, I cannot say, but this patient had well-marked arterial disease. In four cases there was proliferating ulcer, three of the feet and one of the coccyx. When the ulcer develops in the foot, its commonest location is on the sole. In some cases it is along the borders of the foot. In one of my cases a corn was the starting point of the ulceration. The characteristic appearance of the lesion is well illustrated by Fig. 7. In one case the teeth became loosened. In this patient the paresthesia in the distribution of the trigeminal nerve was one of the most distressing symptoms. In two cases the toe nails were affected so that the nails of the big toes dropped off. In one case minute hemorrhages beneath the

Fig. 7.



To illustrate perforating ulcer of tabes.

Fig. 8.

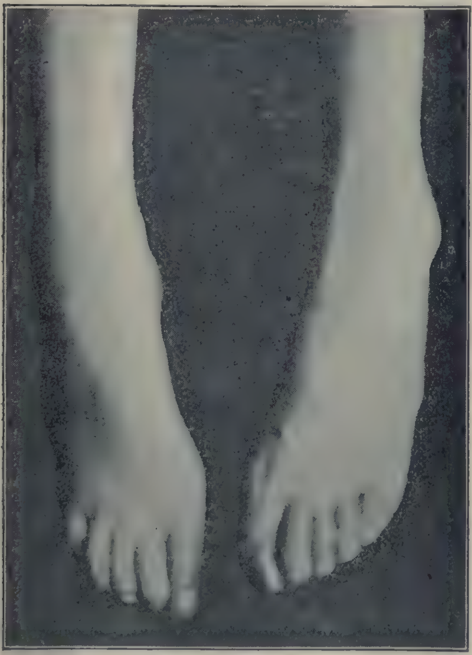


Deformity of the feet resulting from muscular atrophy. The right foot shows pronounced plantar flexion of the toes, especially the big toe.

skin occurred at the end of a very severe attack of pain in the legs.

Muscular atrophy of sufficient degree to be noted was recorded in 18 cases. Of these 18 cases it was a late manifestation in 15, symmetrical in its distribution and more often of the lower extremities than of the upper, of the general appearance of inactivity atrophy and not accompanied with reaction of degeneration. When the atrophy was of the legs some deformity of the foot, such as depicted in Fig. 8, constituting the so-called tabic pes cavus, or pied bot of the French writers, was the result. The deformity may be overcome by manipulation, *i.e.*, there is no fixation in the joint and no contracture of the muscles. The deformity is a simple, atonic one and naturally is seen only in those who are confined to a chair or a bed. Now and then a case is encountered in which there is profound atrophy of the legs without deformity of the feet. Such a case is depicted in Fig. 9. In three cases the muscular atrophy or amyatrophy, occurred comparatively early in the course of the disease and was accompanied by fibrillary contractions and reactions of degeneration which bespoke its dependency upon its involvement of the primary motor neuron. In all of these cases the atrophy was of the upper and cephalic extremities. One of them has been cited. (Case II illustrative of tabes with bulbar involvement.)

Fig. 9.



To illustrate pronounced muscular atrophy in the lower extremities of a female patient with tabes, duration of disease four years.

Disturbance of Sleep.—Insomnia is often a distressing symptom in tabes and in a few cases it is an early manifestation. It is recorded in the histories of my 140 patients that it was sufficiently severe to be noted in 21 cases, *i.e.*, 15 per cent. There is nothing characteristic about the insomnia in these cases. The sleeplessness of some of them is a part of the general emotional perturbation that goes with the recognition of the seriousness of their disease. In others it is an expression of the lowered vitality which the disease causes. I have not noticed the occurrence of dysomnia in tabic patients sufficiently often to make it worthy of mention.

Vertigo.—Vertigo was a symptom sufficiently severe in eight cases, 5.7 per cent., to have it noted in the histories as a conspicuous symptom, but on investigating the statistics it seemed that vertigo was a commoner symptom than indicated by these figures, but it was found that a number of patients said they had "dizziness in the head" when they really meant that they were uncertain of station and gait. Considering the frequency with which arterial fibrosis was noted, it is rather astonishing that vertigo was not spoken of more frequently by the patients. In one case only was it of great severity, and in that case a typical example of Meniere's disease. The symptom was so severe that it overshadowed for a time those of the tabes, unless, indeed, it can itself be considered a symptom. This symptom-complex occurring in tabes has been studied by Marie and Walton (*Revue de Medecine,* 1883) by Marina (*Arch. f. Psychiatrie,* Vol. XVI.) Grasset (*Arch. de Neurologie,* 1895), and others.

Disturbances of Hearing.—Partial or complete deafness was noted only in a very small proportion of cases, nine. In three of these it was unquestionably due to catarrh of the Eustachian tube. In one case deafness set in abruptly and involved both ears. In the other case the auditory examination was not undertaken with the care and completeness which is necessary before one could say positively upon what it is dependent.

Condition of the Urine.—Examination of the urine was not undertaken methodically in all cases apparently, for there is record of such analysis in only about one-half of the cases. It is noted that sugar was found in three cases, two of which were very typical cases of tabes, the other being a case in the preataxic stage. The first of these three patients developed true diabetes, the second and third had glycosuria. Albumin was found at times in seven cases. In two of these there was no question of the existence of chronic interstitial and tubular nephritis, in two the patients were addicted to the intemperate use of alcohol, and in another there was generalized arteriosclerosis.

Loss of Weight.—In 37 cases it was noted that there was a marked loss of weight, and in many of these the occurrence of emaciation was followed by the development of severe symptoms. In five cases there was a very considerable increase in weight, and in two of these the increase extended to beyond 50 pounds, and interfered with the patient's comfort.

Mental Symptoms.—In many cases of tabes there are no mental disturbances whatsoever, and it may be said that perhaps one of the characteristic features of the disease is that its victims remain in full possession of their faculties. Many of them not only follow their callings or occupations for 10 to 25 years, but personally direct large interests, and discharge arduous civic, political and professional duties. Even after patients become bedridden, inmates of an almshouse perhaps, they retain their mental equilibrium and are quite tenacious of life. The feeling of helplessness and despair which comes to many when they first learn of the incurability of their disease, wears away and they soon learn to accept the situation and bear their burden. Others are irritable and susceptible to every outside influence. This is especially true of those cases in which the disease displays itself in the neuralgic form, and of those who take morphine.

It has already been stated that every now and then we encounter a case in which the symptoms parallel those of tabes and of general paralysis. It is almost impossible to say positively in the beginning of the disease how they will eventuate, *i.e.*, whether the burden of the symptoms will be manifest through disease of the spinal cord (tabes) or through the brain (general paresis).

There is a certain proportion of all cases of tabes, at least there has been of mine, in which there has been conspicuous mental symptoms in the beginning of the disease which are best characterized as constituting psychical inertia, a mild dementia, a lack of initiative, of capacity for concentration or continuation upon any subject or line of thought except for a very brief period and then only at the expense of great exhaustion; of forgetfulness, and of neglect of customary social amenities. In some cases emotional symptoms co-exist, but in others they do not and the mental symptoms are no more or no less than those that have been mentioned. I have notes of five such cases. In every instance the psychical symptoms disappeared.

Disease of the Heart and Blood Vessels.—Although Gowers, Marie, Grasset and other European writers maintain that valvular disease of the heart, especially of the aortic valves, is very common in tabes, my experience does not lead me to subscribe to their views. In five cases disease of the aortic valves was diagnosticated: Aortic stenosis, twice; aortic regurgitation, three times. Mitral regurgitations were diagnosticated in two cases. In two cases aneurism of the aorta was readily to be made out and caused most distressing symptoms. In 27 cases it was remarked in the histories that the patient suffered from arterial fibrosis. This diagnosis is made in my clinic when a distinctly enlarged heart without cardiac murmur, with marked accentuation of the second sound, is made out, and when the peripheral arteries, temporal, radial and dorsalis pedis are resistant to the feel, especially if arcus senilus is found associated with it in patients under 50 years of age.

The condition of the pulse was noted in 63 cases. The lowest pulse rate was 60, the highest 117. The pulse rate recorded was that obtained after the patient had been sitting or lying quietly for at least half an hour. The two patients with the aneurism of the aorta are not included among these cases. Of these 63 cases the pulse rate was above 100 in seven instances, between 90 and 100 in 15 cases, between 80 and 90 in 21 cases, between 70 and 80 in 12 cases, and under 70 in eight cases. Thus it will be seen in the vast majority of cases the pulse frequency is increased.

Complications.—In five cases there were motor phenomena which have no place in the typical clinical picture of tabes, and which are therefore deserving of mention. In a case of high tabes there was marked wrinkling of the skin of the face and a distinct tic-like movement occurring irregularly in the right side of the face. In three cases tremor was a conspicuous symptom. In one it was principally of the upper extremities, its rapidity, five to six per second. Possibly it stood in causal relationship to previous alcoholic habits of the individual, though there were no other manifestations of alcoholic poisoning and the patient had not taken stimulants in excess for a considerable time. In another case there was distinct tremor of the lips particularly evident on purposeful movements. This patient had no mental symptoms whatsoever. He has been under my observation for a period of six years and nothing tending to indicate the superimposition of general paresis has developed. In another case there was profound tremor of the head and to a lesser extent of the entire body. The tremor of the head consists of a lateral slightly rotatory movement intentional in character, rapidity, about four per second, and somewhat under the patient's control. There is also coarse tremor of both hands, but it is not so marked as the tremor of the head. The case in every other respect was typical of tabes. The patient was a widower, forty-six years old, who had a chancre at the age of twenty-one. The initial symptoms were shooting pains in the lower extremities and leg weariness. All of the characteristic objective symptoms of tabes existed. In the fifth case in which there were noteworthy motor symptoms, the patient presented a peculiar condition of the abdomen. The abdomen, especially the epigastrium, is separated by four distinct furrows running crosswise and between the umbilicus and the tenth rib there is a never-ceasing alternating contraction and relaxation of the recti abdominis muscles and of the external oblique which constitutes a vertical rhythmic tremor. How long it had existed or how long it continued I do not know. The patient was seen a few times only in the hospital. In four cases there was muscular atrophy which was thought to be of spinal origin. These cases will be considered in detail in a future communication.

In two cases recurrent attacks of hiccough were noted. In one of these it was of much severity, in the other it seemed to come on occasionally with acute indigestion. One patient complained very much of coughing spells which came on suddenly and without cause, and were in a general way paroxysmal. The patient had no bulbar symptoms.

In five cases discoloration of the skin, argyria from nitrate of silver, which had been given for therapeutic purposes, was encountered.

One patient had a painless swelling of one testicle, probably a gumma. There were no indications that the patient was syphilitic, not parasyphilitic.

In 11 cases lacrymation was recorded as having existed. In these cases it was probably sufficiently annoying to the patient to have him complain of it. It seems noteworthy that the clinical phenomena of Graves' disease were not encountered in any case of this series. Five cases diagnosticated as tabes eventuated in general paresis.

The following shows the percentage of the frequency of the most conspicuous subjective and objective symptoms: Lancinating pain, 90; Romberg sign, 85; loss of Achilles-jerk, 88; loss of knee-jerk, 84; Argyll-Robertson pupil, 77; ataxia of gait, 73; hypotonia, 72; paresthesia, 73; anesthesia, 67; analgesia, 58; bladder symptoms, 55; impotency, 50; crises, 20; ocular paralysis, 10; arthropathies, 5; trophic symptoms, 8; optic atrophy, 14; girdle sensation, 30; deep sensibility, 63; diplopia, 22.

PRIMARY TUBERCULOSIS OF THE EAR FOLLOWED BY MASTOIDITIS: REPORT OF FOUR CASES.*

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TUBERCULOSIS of the ear, secondary to and associated with tuberculous processes in other parts of the body, is not of infrequent occurrence, and of the available statistics it may be of interest to mention that Schwabach[1] found in the examination of 139 hospital patients affected with tuberculosis pulmonalis eight cases of aural suppuration, or $6\,{}^{9}/_{10}$ per cent.; in another series of examinations 139 tuberculous patients included 11 where otitis media suppurativa was present, or $7\,{}^{9}/_{10}$ per cent. Moldenhauer[2] cites 294 cases of tuberculosis in which were found seven cases of otitis media suppurativa, or $2\,{}^{4}/_{10}$ per cent.; Bezold[3] maintains that tuberculosis of the ear is not at all a rare complication. Steinbruegge[4] admits the frequency of aural invasion in tubercular patients, but raises the question: "Are we dealing with the local appearance of a general tuberculosis or with a coincident infection by other germs."

In the post-mortem examination of the temporal bone in 17 tuberculous subjects Habermann[5] determined the presence of tuberculous lesions of the petrosa, or 33 per cent. Schwabach[6] in 26 post-mortem examinations confirmed the presence of tuberculous invasion of the ear in 16 cases, or $81\,{}^{5}/_{10}$ per cent.

While the results of these clinical and pathological data are considerably at variance, we may readily assume that the ear is comparatively often affected in the course of systemic tuberculosis; yet every ear affection coming under observation in the course of a tuberculous invasion must not be considered as a tuberculous process per se. The statistics above cited are from the summary of Bruck.[7]

The first specific records of localized tuberculous invasion of the ear are those of Bobone,[8] von Breuning,[9] Gottstein,[10] and Morpurgo,[11] all of which were published during the year 1883 and about the time of Koch's discovery and earliest description of the *Bacillus tuberculosis.* No doubt specific lesions of this character were frequently observed prior to this period, but the discovery and nomenclature of the *Bacillus tuberculosis* first made possible the certain diagnosis of primary tuberculosis of the ear.

In a study of the bibliography of this subject we find that 33 cases of definite tuberculosis of the ear is an extremely difficult one—difficult beservers. There is no doubt that a careful bacteriological examination in the frequent otitis media suppurativa accompanying general tuberculosis would add largely to this limited number of reported cases. Of the 33 cases thus far published of otitis tuberculosa there are only three recorded which have been definitely determined as primary tuberculous lesions. These are the cases of Williams,[12] "Primary Tubercular Inflammation of the Middle Ear," Trans. Minn. Med. Soc., St. Paul, 1885, pp. 161-163; H. Knapp,[13] "A Case of Primary Tuberculosis of the Mastoid Process," *Archives of Otology,* N. Y., 1894, XXIII., p. 84; J. F. McCaw,[14] "Tuberculous Otitis Media, Mastoiditis and Meningitis in an Otherwise Apparently Healthy Adult," MEDICAL NEWS, October, 1901. Milligan,[15] in an exhaustive paper in a general consideration of the subject, presented to the sixth international Otological Congress, concludes that primary tuberculous lesions of the middle ear joining mastoid cells are comparatively common, especially among the children of the poorer classes. In the other 30 reported cases the lesions are not recorded as primary tuberculous invasion of the ear, nor are there evidences presented to this effect.

It must be conceded that the establishment of a positive diagnosis of primary tuberculosis of the ear is an extremely difficult one—difficult because of our inability to eliminate slight old pulmonary lesions which might have become encapsulated or systemic tuberculous lesions elsewhere, where such original foci are not revealed even on most careful and repeated physical examination. As the pulmonary tissue is the *locus minus resistentiæ* of invasion of the *Bacillus tuberculosis* we assume that most tuberculous processes have their origin there. Many of us have had actual evidences in the post-mortem room of active tuberculous lesions in remote organs, which were not assumed as primary, and on closer study and investigation fibrous deposits, encapsulated cavities and pathologically typical tuberculous foci have been found, which had long since ceased their active disturbance and which remained as silent proof of the fact that these so-called primary lesions were actually but secondary, metastatic infections.

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On the other hand, in the light of recent clinical and pathological research is it not reasonable to assume that a tuberculous infection can exist primarily in the upper respiratory tract or ear before the lungs are actually involved? There are several facts to corroborate this observation. In the first place, the *Bacillus tuberculosis* is found with surprising frequency in the microscopical examination of even the healthy pharyngeal mucosa. Again, the predisposition to tubercular infection very often includes a mucosa of the upper respiratory tract far below par, anemic and poorly nourished, and showing every evidence of weakened physical vitality. It is this same mucosa which first harbors the tubercle bacillus and makes this area one of imminent danger to infection. We have had well-substantiated cases reported of primary tubercular infection of the tonsil, pharynx and larynx, where even the autopsy revealed no other lesions or systemic tuberculous invasion.

From a bacteriological and pathological view the ear should be recorded as in integral part of the upper respiratory tract, because of its intimate association and direct continuity of its mucous surfaces with this area. It may be generally stated that over 70 per cent. of the inflammatory and infectious processes which involve the ear have their origin in the pharyngeal and nasopharyngeal cavities. It would seem logical then to include tuberculous infections in this class.

When a case of primary tuberculosis of the ear is reported, a microscopical examination of the discharge from the ear reveals the presence of *Bacillus tuberculosis*, the clinical data recorded as those of a typical tubercular invasion, and autopsy examination finally strengthens this pathological chain by excluding the presence of tuberculosis in all of the principal organs and tissues of the body (as in the case reported by McCaw), I think we may positively assert that primary tuberculosis of the ear does exist.

I have simply mentioned these data briefly to substantiate my conviction that a primary tuberculous infection of the ear per se is not only theoretically possible but actually more frequent than a first consideration of the subject would indicate.

To further substantiate this conclusion clinically I take pleasure in reporting the four following cases:

Case I.—H. M., colored, male, 6½ years of age, well nourished and of average strength and activity. At the age of three years patient contracted measles, from which he recovered without any of the frequent aural complications. One year later an intense acute earache of several days' duration ensued, followed by a copious, purulent discharge; for eighteen months the discharge continued freely and uninterruptedly without the accompaniment of any unfavorable symptoms. May 1, 1894, the patient first came under my observation. I then lost trace of him for two months. When he returned the discharge had stopped, due to the plugging of the entire external auditory canal with a viscid, cheesy mass, which on examination proved to be composed of partially dried and inspissated pus, epithelial shreds and detritus, emanating a very fetid and offensive odor. The entire mastoid process was sensitive to slightest pressure, and the typical symptoms of mastoid infiltration were present. There were distinct points of fluctuation, especially just below the linea temporalis. A marked and almost complete facial paralysis was demonstrable on the affected side. A small sinus, from which a spicule of bone had been recently discharged, was patulous, located almost over the apex of the mastoid process.

On entering the mastoid, evidences of a severe necrotic process were seen, and the entire cellular bone structure had been converted into a rotten, cheesy mass. A long sinus was exposed to view, leading downward and forward with a depth of nearly two inches, and diameters varying from one-half to one inch.

The subsequent treatment of this case was an unusual one and offered several points of much interest. First, there was an exfoliation of five distinct bone sequestra, in one of which was included the cochlea and the major part of the posterior semicircular canal. Second, an examination of the contents of the mastoid removed during operation showed the presence of numerous giant cells and groups of tubercle bacilli in almost pure culture. Earlier in the history of the case a microscopic examination was also made of the discharge from the ear and the presence of tubercle bacilli demonstrated. A careful physical examination at that time gave no indication of a phthisical onset, so every precaution was used to detect any change in the condition of the lungs. Three weeks later incessant coughing, profuse expectoration, rise in temperature, enlargement of the superficial lymphatic glands, rapid emaciation, great prostration and finally the involvement of the lungs, and, as determined by later examination, the demonstration of the presence of the *Bacillus tuberculosis* in the sputum occurred. This well-marked symptom-complex points to the development of a rapid phthisical process. It seems rational and reasonable to conclude that this miliary tuberculosis was perhaps a secondary development of the original tubercular infection of the ear.

In the post-mortem examination several months later the diagnosis of a rapidly developing miliary tuberculosis as an infection secondary to the aural disease was substantiated, as the pulmonary lesions and those of other organs in the body indicated the infection of these areas to be more recent than that of the ear.

Case II.—M. S., white, female, thirty-two years of age; history of mastoid fistula during childhood, the result of mastoid abscess which had not received attention. When this case was first brought to my notice in June, 1899, an early mastoid operation was indicated. The discharge had continued intermittently ever since the early mastoid invasion. During the last few months the discharge has been sanious and foul-smelling in character. The patient complained of acute, sharp pains in the area of the mastoid. Examination revealed much soft granulation tissue in the fundus of the external auditory canal, the canal wall somewhat sagging and the mastoid areas showing beginning infiltration, and was extremely sensitive on the slightest pressure, marked rise in temperature. On exposing the antrum by the Schwartze operation this whole area was seen filled with unhealthy granulations and suspicious-looking cheesy deposits. This was carefully curetted, as was also the granulation tissue in the middle ear cavity, and an unusually large opening was made in connecting the antrum with the typmpanic cavity. Examination of the cheesy deposit taken from the mastoid cells and antrum revealed the presence of *Bacillus tuberculosis,* in some fields almost in pure culture. A thorough physical examination of the patient failed to reveal the presence of any other tubercular lesion. The wound began healing satisfactorily, but during the later stages of convalescence it was noticed that the granulations filling the site of the operation were unsatisfactory in character, and a stubborn, scant discharge was maintained. Unfavorable symptoms gradually developed and in November, 1899, the radical operation was performed. The largest portion of the previously operated mastoid area appeared healthy and the granulations firm. Along the direct tract of the antrum and tympanic cavity, however, there were indications of reinfection. A radical curettement was made of the entire mastoid cell-structure of the antrum and tympanic cavity. One inch of the lateral sinus was exposed and found healthy; some of the deeper points in this large excavation which could not be readily reached by the small curette were touched with pure guaiacol. When last seen, one year ago, the wound had completely healed; discharge from the auditory canal had ceased; general condition of the patient constantly improving and with no secondary tubercular involvement apparent after repeated careful physical examination.

In the interim between June 10, 1902, the date of reading this paper before the American Laryngological, Rhinological and Otological Society and December 10, the date of sending this manuscript for publication, the patient again presented herself at my office. I found a small sinus extending deep into the petrosa, and the patient complained of intermittent pain radiating from the mastoid area upwards, forward and backward. I decided on a third operation, and this was done October 25, 1902. The entire mastoid area was freely exposed and was found filled with firm, healthy granulations. The area over the lateral sinus which had been exposed at the previous operation was seen covered with tough, fibrous and well-organized tissue. The site of the reinfection proved to be in the superior wall of the cavum tympanum and aditus. No pus was found, but some broken-down granulations and small scattered foci of grayish caseous masses. There was a carious opening through the tegmen tympanum and a small area of dura was exposed at this point. This was carefully examined by liberal exposure of the dura. A thorough curettement was done of all soft granulation tissue and caseous particles, and the entire tympanic cavity was carefully cleansed. The antrum had been obliterated and freely opened in the previous radical operation. The patient is doing nicely at this writing, December 10; there has been no rise in temperature, but slight pain, and the wound at each dressing looks clean and is granulating nicely.

In the two previous mastoid operations undertaken in this case the presence of *Bacillus tuberculosis* was definitely demonstrated. In this last operation I also had a microscopical examination made of the scrapings of the wound and of the caseous particles, and as an additional precaution requested the inoculation of a guinea-pig, and append herewith the report of the pathologist:

"DEAR DOCTOR: I beg to report that the 500-gram guinea-pig which was inoculated with material from the mastoid cells, submitted to me by you October 25, 1902, having shown no symptoms to date, was killed. No signs of tuberculosis were present. I found no tubercle bacilli in the smears, as previously reported.

"Very truly yours,
"R. B. H. GRADWOHL."

This seems to indicate either that the tuberculous element has been eliminated or that it is not at present active.

Case III.—S. M., white, female, age eight years; history of chronic suppurative otitis media in right ear of six months' duration, following scarlet fever. The patient lived in rather unhygienic surroundings in the tenement district, and the ear had received no previous treatment whatever. She presented herslf at my clinic at the Beaumont Hospital Medical College in March, 1897, with an acute mastoiditis following the chronic suppurative otitis media. A Schwartze mastoid operation was performed before the class. Some of the granulation tissue and foul-smelling detritus from the mastoid wound was stained for tubercle bacilli and examined while the patient was still on the table. To my surprise large numbers of giant cells and groups of pure culture of tubercle bacilli were found. I did not suspect the presence of this specific infection in this case, for there was absolutely no clinical evidence of it until the mastoid cavity was exposed. The child was otherwise well nourished and apparently healthy. The patient made an uneventful recovery after this mastoid operation and is well to-day.

Case IV.—J. S., male, colored, fifty-eight years of age; barber, single. Applied for treatment at my clinic in 1896 for chronic suppurative otitis media, right. This had existed for some seven or eight years, and upon examination the middle-ear cavity was found filled with granulations and a thin, greenish, foul-smelling pus. A curettement of this tissue was made, and during the operation several small carious areas in the attic were determined. The wound was packed with gauze and the patient instructed to return the following day. I regret to say that we lost trace of him, and it was reported that he had left the city for the South, so that I was unable to determine a further status of this case or of his general physical condition. The curetted granulation and pus, however, were examined and tubercle bacilli were found. In the first syringing of the ear in this case the malleus was washed out. Part of the head of the malleus and the processus brevis were found necrosed.

I also wish to report in this series another case of tuberculosis of the mastoid, which, from the post-mortem evidences, cannot be included in the class of primary tuberculosis of the ear. The otitis tuberculosa followed in the course of an old pulmonary tuberculous lesion. This case is reported from the practice of Dr. Joseph Beck, of Chicago, the post-mortem specimen of the mastoid having been presented to me. The notes of this case are as follows: Female, sixty-two years of age, had otitis media suppurativa chronica for a number of years, with an outgrowth, bony in character, in the external auditory canal. From time to time she gave a history of pain in the mastoid region. Discharges were examined and found to be tuberculous. The patient developed a basilar meningitis and enteritis, and died after a week's illness. Post-mortem examination found the mastoid process filled with granulations of tuberculous nature. The ossicles were not destroyed. Old tuberculous scars were found in the apices of both lungs.

From this series of cases and their definite clinical and pathological data, I think that I am justified in my conclusions as to the primary character of the tuberculous infection of the ear. All of these cases were seen more than three years ago; three of the four are still living, and careful physical examination fails to show any present tubercular affection. There are no evidences in the histories of these cases or in their clinical development, either of acquired or hereditary tuberculosis in the families of these patients. Of the four cases, three involved the mastoid cells extensively, and showed an unusually active and rapid invasion. All of the cases developed from a pre-existing otitis media suppurativa chronica, and appeared to me as direct infection by the bacillus tuberculosis. In the three cases where the mastoid operation was performed, the wounds healed by firm granulations, and all evidences of tuberculous trouble ceased with the removal of the local process. This is in direct contrast to the healing of wounds in patients where the systemic tubercular invasion is present. The data which have been furnished in the cases herein reported all point to definitely localized specific infection of the cavum tympanum and mastoid cells, with the characteristic development of a tuberculous process as it occurs in bone tissue, and with the definite demonstration of the *Bacillus tuberculosis* in each case.

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MEDICAL PROGRESS.

SURGERY.

Multiple Myeloma of Bone.—The following propositions concerning multiple myeloma of bones are offered by P. Vignard and L. Gallavardin (Rev. d. Chir., Jan. 10, 1903): Among divers telangiectatic forms of tumor of bone, there may be distinguished as a distinct type primary multiple tumors of bone. These have the essential character of developing at several points of the osseous tissue simultaneously, for it is not possible to distinguish in many cases the primary from the secondary deposits, and this outbreak of tumors appears everywhere in the red marrow, especially in the sacrum, ribs, vertebræ, etc. It is never accompanied by visceral ectastases, which remain confined to the bones. This group of primary multiple tumor of bone does not constitute histologically a homogeneous entity, for some lymphadenomatous and for others endotheliomatous, and, finally, a third series of myelomatous, a term denoted by various authorities significant of special structure. The multiple myeloma of bone, among other characteristics in common with other primary tumors has distinctive features, for example, an extremely large number, very possibly a clinical rotency of rapid cachexia, fever, derminal coma, and finally, albumosuria, as originally described by Bence-Jones. This last character may or may not be a constant or specific feature of the disease, a point which must always be decided by subsequent research.

Pathogenesis of Hydronephrosis.—In the subject of hydronephrosis, especially of the intermittent type, P. Bazy (Rev. d. Chir., Jan. 10, 1903) offers the following facts: It usually has its origin in the congenital disposition of the pelvis and accessories of the ureter. The maximum degree of congenital condition which would permit a hydronephrosis would be realized in a voluminous pelvis of horizontal type, latter bent or elbowed or twisted. This condition is truly rare, correspondingly in fact as the disease itself. Accessory conditions of the ureter are stricture and false torsures, especially at the upper extremities. Intermittent hydronephrosis may also be caused by mobility of the kidney, but in the opinion of this writer, ptosis and mobility of the kidney are really secondary conditions to the hydronephrosis. Stagnation of a small quantity of urine in a congenitally large pelvis may also favor this disease. This cause constantly repeating itself in virtue of some congenital condition which favors it, even in a very small degree, finally brings the kidney to a condition of increase in size and weight. Then follow displacement and the condition of stagnation, and thus the first stage of intermission in the hydronephrosis is established. Torsions, folds and bends in the ureter which result from the ptosis, which are either created or augmented by the ptosis, may become fixed by adhesions or by a sclerosis in the wall of the tube, due to irritation, which itself is secondary to the mild infection or primary without infection, in virtue of the mechanical arrangement of the parts. Intermittent hydronephrosis may follow this type, either from the very outset, or after and in virtue of a number of attacks. The permanent, definite condition is, of course, created by adhesions which fix the ureter and hinder the pelvis of the kidney from emptying itself on the one hand by simple position of the pelvis and on the other by a diminution in the caliber of the ureter.

Costal Hydatid Cyst.—On the diagnosis of this rare condition H. Gerand and R. Mignot (Rev. d. Chir., Jan. 10, 1903) offer the following points: Commonly, hydatid cyst of bone passes unnoticed until a spontaneous fracture, pathologically, calls the attention of patient and surgeon alike to the affected bone. The condition might suggest spontaneous fracture secondary to tabes, to gumma or to sarcoma. The tabetic fracture would be recognized by the other signs of locomotor ataxia; the gummatous fracture by the history of syphilis early in the patient's career; the osteocope by the fact that, contrary to the case in hydatid cyst, it will recover under immobilization and antisyphilitic treatment. Fracture of the bone, due to sarcoma, usually is followed by rapid development of the neoplasm, and accompanied by the local temperature and by prominence of the subcutaneous veins, and often by expansile movement, particularly if the sarcoma is of the vascular type. Aside from this accident of fracture, the disease is characterized by a slowly developing torpid tumey fracture, and should be differentiated from osteitis sarcoma, and particularly from tuberculous osteitis, of which the clinical picture very closely indeed simulates that of the septic condition. The tension of the tumor is much less than in tubercular osteitis in the hydatid cyst, which gives the sensation of an extensive, resistant, dense pocket. It is very certain, however, that the diagnosis is exceedingly difficult, and one is much more inclined to make a diagnosis of a cold tubercular abscess of bone than of a hydatid cyst. The last and final means of diagnosis, of course, is aspiration with a needle, or, better still, exploratory incision. The treatment is necessarily surgical, and consists, briefly, in removing the entire disease without rupturing the cyst. If this appears infected, the raw surfaces of the wound in all directions must be protected in order to avoid secondary infection.

An Unusual Case of Strangulated Hernia.—A case of strangulated hernia presenting some unusual features is reported by P. Giannantoni and S. Gugliuzzo (Rif. Med., Dec. 23, 1902). The patient had for many years been in the habit of reducing the hernia himself by taxis, and experienced no great discomfort till one day, after severe muscular strain the tumor again escaped through the ring; its escape being this time accompanied with severe pain. The patient succeeded in reducing the hernia, but more than the usual force was necessary to accomplish its reduction, and the pain persisted. Obstipation was complete from this time, and stercoraceous vomiting set in. Upon examination no evidence of hernia could be found; and with the exception of a dilated inguinal canal, nothing unusual was apparent; but from the symptoms and history given by the patient, a diagnosis of strangulated hernia reduced en masse was made. In view of the element of uncertainty in the case, it was deemed best to make a median incision from the umbilicus to the symphysis pubis. This being done, an incarcerated hernia reduced en masse was found in the right iliac fossa. The tumor was then brought outside of the abdominal cavity through incision of the inguinal canal and the radical operation for strangulated hernia performed. The authors believe that the median laparotomy should always be done in doubtful cases and in cases of strangulated hernia reduced en masse, the further treatment being accomplished readily after this preliminary measure.

Fracture of the Patella and Olecranon Treated with a Tendinous Flap.—An innovation in the management of these most troublesome fractures is described by P. FERRARESI (Policlin., Vol. IX, C. fasc. 12, 1902), the advantages of which would seem to render it a distinct improvement upon the methods hitherto used. The author describes it as follows: An incision in the median line commencing about seven cm. above the upper border of the patella and continuing to a like distance below that bone, is made. A flap two mm. thick is then dissected from the tendon of the quadriceps extensor; the base of the flap remaining attached to the superior border of the patella and its size being sufficient to entirely cover it. An assistant holds the fragments firmly together and the operator brings the flap down over the patella and sutures it securely to the patellar ligament below and to the surrounding fibrous tissue upon the sides; thus forming a resistant fibrous case for the patella, which effectually immobilizes the fragments. The functional results have been exceedingly good in the cases so treated. Much the same idea has been applied by Ferraresi to the treatment of fractures of the olecranon; a flap from the tendon of the triceps being utilized.

Strangulated Hernia in an Infant of One Month.—So rarely does this condition occur in early life, the case reported by E. FORTUN (Rev. Med. Cubana, Dec. 15, 1902) is of special interest. The patient, an infant of one month, had been referred to him with a diagnosis of strangulated hernia, and examination showed, in the right inguinoscrotal region, a tumor about the size of a lemon; percussion over it yielding a tympanitic note above, and dull note below. Vomiting was incessant and the abdomen was much distended and tympanitic; the little patient giving evidence of the greatest distress. Celotomy was performed and an incarcerated congenital inguinal hernia was found; within the sac lying the cecum and its appendix. Inflammation being present in the latter, it was resected, and the cecum reduced, following which the radical operation for strangulated hernia was performed. The child made a rapid and complete recovery.

Bone Cysts.—The treatment of bone cysts should, as a rule, be conservative. For this course of procedure the ordinary, uneventful course of healing, with good functional results which ordinarily follow, plead, in cases which have been operated on late. This and the following suggestions upon the subject are offered by G. COCH (Arch. f. klin. Chir., B. 68, H. 4, 1902). The ordinary conservative methods consist primarily in extirpating the cyst and of fixation of the bone by means of a hard splint. The walls of the cyst must be bodily removed with the chisel and bone forceps, until sound bone is laid bare. Such bone is better suited to good recovery. If the ends of the bone are difficult to fix upon each other, this point is accomplished by means of wire or other well-known media. In the various cases I have seen, a simple extension splint of plaster of Paris was applied, and healing and recovery were eral is concerned, his own experience, it is good, excepting when the cyst is due to the softening of the central parts of a malignant tumor. In cases of this description, it is possible to carry out the ordinary conservative treatment by resection of the bone in continuity, but the patient must take the precaution to return for observation, and the surgeon must be on guard to do an ex-articulation at the very first sign of relapse of the disease.

Cysts in the Teeth.—Cysts occurring in rigid organs, like the bones and the teeth, are not altogether rare, but they are very difficult of treatment and often of recognition. J. C. OLIVER (Ann. of Surg., Jan., 1903) offers the following observations on the subject: He says that the recognition of the real nature of these growths rests very largely upon the following four points: (1) Absence of a permanent tooth, after it should have been erupted, without any history of its removal; (2) the cystic nature of the growth; (3) the crackling sensation of the thin bony cyst-wall when pressed upon; (4) exploratory incision. The development of a cyst at or near the time of eruption of a permanent tooth may be of value in diagnosis, as may also the slow increase and painless development of the neoplasm. "Crackling" is by no means a constant symptom, and is inferior in diagnostic import to tapping or incision. In any case of cyst connected with either jaw, incision of the mass should precede incision of a part or all of the jaw. This conservative measure does not interfere with the radical one, and may frequently obviate any mutilating procedure. The prognosis is uniformly good, both as to the life of the patient and from an esthetic point of view. The evacuation of the cyst, removal of the tooth, thorough curetting of the interior, with subsequent packing of the cyst cavity, is the proper procedure in all cysts connected with the teeth. This mode of attack will certainly remove the growth as well as the cause of it. Cysts in connection with the teeth never require removal of osseous structure in order to bring about a cure. Of course, one can imagine the implantation of a malignant growth upon one that was originally benign, but literature on the subject does not record an example of such transformation.

Enterectomy for Malignant Disease.—In Treves' System of Surgery, published only three years ago, one finds the statement that if a growth causing intestinal obstruction be found to be malignant, it should be left in situ and the gut short-circuited. WALTER L. WOOLLCOMBE (Brit. Med. Jour., Jan. 10, 1903), in reviewing the literature of the treatment of malignant diseases of the bowels, said that so much progress had been made that statements of this kind, although so comparatively new, were already ancient history. Typically the only variety found is the cylindrical celled epithelioma which commences in the Lieberkühn glands and appears in early stage as a very minute nodule which spreads gradually around the bowels and follows the course of the vessel. The growth has a strong tendency to contract and it is this which forms a distinctive difficulty in dealing with malignant diseases as opposed to other forms of intestinal disease. Exploratory laparotomy, which has been decried so loudly in certain medical quarters, is undoubtedly coming to be recognized as the only reliable means of establishing diagnosis. This done, the tumor should be removed in three stages: First, the delivery and fixation of the growth outside the abdomen; second, the opening and drainage of the gut above the growth; third, the removal of the growth and union of the resected gut. Two hundred plans for effecting this have been described and about 20 of these remain as practical and useful. Many cases do much better under a local anesthetic than under general narcosis, and particularly if eucaine be used a great many lives, which are now sacrificed to chloroform or ether, would be saved.

Value of the Schleich Narcosis.—A careful comparative study of the usual ether and the Schleich methods of narcosis has been made by F. v. Winckel (Münch. med. Woch., Jan. 6, 1903). The Schleich mixture, given in 101 cases, contained ethylchloride 2, chloroform 4, and ether, 12 parts. Plain ether was given in 60 cases and ether with morphine in 15 cases. It was found on tabulating the results that the Schleich anesthesia came on more rapidly than the others (one to three minutes), the quantity used was smaller (75:115), a fall of temperature did not occur so often, and bronchitis was less likely to follow. In ten cases, however, in which the Schleich method was used resort was had to other anesthetics on account of the development of dangerous symptoms. Considering the comparative value of the two methods, however, the after-effects attending ether narcosis seem much less severe than those attending the use of Schleich mixture and the author believes that no marked advantage attends the latter, that dangerous symptoms are more often noticed, even though the time and quantity employed are less for the Schleich mixture than for ether.

Gastric Polyp.—An interesting case is reported by F. Lucksch (Prag. med. Wochenschr., Jan. 1, 1903) of a mucous polyp of the stomach which in its clinical features resembled a carcinoma of the pylorus. The patient, a woman of forty-two years, complained of severe pains in the left hypochrondrium and had sustained a marked loss in weight. Vomiting was present after meals. Stools were diarrheal and dark-colored. Examination of the emaciated patient apparently revealed a tumor in the pyloric region. A few days later she died from inanition. Autopsy revealed a general miliary tuberculosis with numerous cheesy nodules in chest and abdomen. A polypoid tumor was found in the pyloric end of the stomach about 5½ cm. long, which projected through the pylorus into the duodenum. Microscopically the tumor was shown to be made up of connective and muscle tissue covered with mucous membrane. It was very vascular and infiltrated with numerous round cells. The author believes that as the result of a chronic gastric catarrh, a hypertrophy of the pyloric mucosa took place which was followed by the formation of an edematous polyp. The passage of the food current pressed it against the pylorus and the latter by its efforts at expulsion caused the gradual formation of a long pedicle with a bulbous portion at the end projecting into the lumen of the duodenum.

Paraffin Injections.—The most suitable syringe for this purpose is, according to J. A. Smurl (Am. Med., Jan. 31, 1903), a metal one modeled after Janet's. It should have a capacity of three drams and a caliber equal to that of the ordinary syringe. The needles are similar to antitoxin needles but have an elongated point. The author discards local anesthesia on account of the distention caused by the fluid which masks the field of operation. The paraffin is mixed with red vaseline in the proportion of three to one and boiled for an hour. After cooling, it is stored in an aseptic container. The syringe is filled with fine shavings when needed and heated over a spirit lamp. The injection is carefully made under the skin and molded with the fingers. Smurl thinks that no chemic change takes place after injection. He made several experimental injections of paraffin into the cellular tissue of the arm and found that in each case it became thoroughly encapsulated by fibrous tissue.

Rupture of the Urinary Bladder.—This accident may happen to one and to all three walls of this viscus. A rupture is either intraperitoneal, involving that portion of the bladder not covered by the peritoneum; or subperitoneal, the mucous and muscular walls being ruptured, leaving the peritoneal covering intact; this latter variety is very uncommon. The most frequent location of the rupture, says John W. Keefe (Am. Jour. of Obstet., Jan., 1903), is in the upper and posterior portion of the bladder, and this may be accounted for by the bladder when distended, lying in contact with the promontory of the sacrum, force applied in front, pressing the viscus against the bony point. The bladder wall is also thinnest at this point. Most ruptures located anteriorly are complicated with fracture of the pelvic bones. Atony, sacculation, and ulceration of the vesical walls are predisposing causes. Several cases are reported where the bladder wall was hypertrophied. The direct cause of rupture is usually some form of external violence applied over the region of the bladder. Rupture by contre coup has occurred, even with an empty bladder. Violent straining at stool, during micturition, and parturition has been known to produce rupture. The lesion is more common in men in the proportion of ten to one. The symptoms are shock, pain over the hypogastrium, desire to frequently micturate, inability to void urine, or possibly a few drops of blood, face is pale anxious, pulse rapid and feeble; clammy perspiration, and the abdomen becomes distended; temperature rises; delirium, coma and convulsions may ensue. The patient frequently says that he felt something give way inside. The histories of a number of cases show that the presence of clear urine in the bladder does not prove that the bladder has not been ruptured. Early diagnosis is most important; then comes the determination as to whether the rent is extra- or intraperitoneal, and if extraperitoneal the extent of the rent. In a series of 315 cases, only 16 per cent. recovered; of 21 laparotomies for intraperitoneal ruptures, 10 were successful. Early laparotomy which in itself has a mortality of from one to three per cent., should be practised in not only every known case of rupture, but even where the rupture is but suspected.

Flatfoot.—Tendon transplantation and the holding of the tendons in place in flat feet is the subject of a contribution by E. Miller (C'blatt. f. Chir., Jan. 10, 1903). The technic which he recommends is the following: A curved incision along the border of the structure of the foot, beginning below the inner malleolus, half-way between this and the sole of the foot, and ending forward at the base of the first metatarsal bone. In the front part of the wound is seen the insertion of the tibialis anticus muscle, which is divided and isolated upward, toward the angle. Then the under surface of the bony ridge of the foot is laid bare about one centimeter outward, and then, with a trephine having the diameter of an ordinary lead pencil, a hole is cut from below upward, through the navicular bone. The opening of the tabialis anticus is then drawn through this hole with a sling of thread. The arch of the foot is then forced as far upward as possible, and the tendon through the opening is drawn back as much as possible, so that its end might be carried around the tuberosity of the navicular bone from below inward and upward, and fastened in this curved position to the periosteum with stitches. Thus the arch of the foot is held up by this opening, as by a cord. The after-treatment usually persists for three or four weeks, and consists in massage and passive motion, followed by careful active motion, never, however, without a suitable brace for flatfoot. When the muscles have all returned to health this may be cast aside.

Vaseline and Oil for Injections.—Vaseline which remained hard below 35° C. was the original article with which R. GASUNY (C'blatt. f. Chir., Jan. 3, 1903) made injections for the restoration of various deformities. He now desires to obviate some of the difficulties of using this hard substance by using a mixture of one part of vaseline and four parts of olive oil by volume. This mixture should be prepared fresh for each application, and sterilized by boiling. It is semifluid at the ordinary temperature, and possesses diffusibility very much greater than that of simple paraffin; it therefore reaches much more completely the various cavities and recesses of the part of the body treated. This observer, therefore, finds that it has all of the advantages and none of the disadvantages of the paraffin.

Difficult Anesthetization.—Difficult or bad subjects for anesthesia by inhalation are described by H. W. HEWITT (Lancet, Jan. 10, 1903), as including all patients who, unless skilfully treated display marked excitement, rigidity and tendency, even under deep anesthesia to inconvenient reflexes, and, apart from the administration of an overdose, may pass into danger or die. They are not the subjects of grave malady, but are often those who have never been ill a day. They may be classed under six headings: (1) Patients of general good health, but possessing some physical peculiarity, with more or less liability to intermission or arrest of breathing; (2) patients whose respiratory tract is in some way encroached upon or impeded by pathological or other conditions; (3) patients suffering from grave physical or constitutional disease; (4) highly nervous or excitable patients or the victims of a nervous disease, or of alcoholic, tobacco, morphine, or other drug habit; (5) patients combining any of the characteristics of two or more of the preceding classes; (6) patients who prove to be difficult or bad subjects for anesthesia without any discoverable cause. Apart from the general rules for good anesthesia, this author concludes that a mixture of chloroform and ether, administered slowly, produce better results in these patients than either ether or chloroform alone. The mixture which he recommends consists of two parts of chloroform and three parts of ether. He likewise recommends the use of a small mouth-gag, so that oral breathing which he considers more efficient than nasal breathing, shall be entirely uninterrupted.

Operative Asepsis.—In answer to a series of questions put to the members of the Belgian Surgical Society concerning the measures employed by each for the attainment of asepsis in surgical work, A. DEPAGE (Jour. Méd., Bruxelles, Jan. 15, 1903), describes his own methods and discusses the value of various aseptic measures employed. It is his invariable rule not to touch a purulent subject before operating; all necessary dressings, in such cases, being deferred till after operations have been completed; neither does he attend autopsies before operating. All assistants are subject to the same rules. After the usual disinfection of the hands, including paring of the nails, scraping their under surface, scrubbing the hands with soap and water from five to ten minutes, and bathing them for three to five minutes in sublimate, daily cultures upon agar are made from the under surface of the nails to ascertain the efficiency of the disinfection practised; this being considered a most important procedure by the author, as, in his experience, the time necessary for disinfection varies with the individual, and repeated cultures alone determine the requisite duration of the disinfecting process in each. Such control of assistants also, is believed to be most advantageous in the maintainance of a strict regard for personal asepsis. Some interesting points concerning the purity of the air in the operating room have been brought out by the author in the course of repeated observations. He found that after the room had been closed a certain length of time and no one had entered it, the number of bacterial colonies growing upon agar plates was very small; never more than five, and frequently none at all. When access to the room was permitted, and, in consequence, currents of air started, the colonies numbered upon an average, twenty. The day after disinfection of the room with formalin, no colonies developed, and if the door were kept closed, five to six days elapsed before the number of colonies indicated the usual number of microbes in the air. Depage has discarded the face mask formerly worn during operations, since finding that bacterial colonies upon agar were more numerous after speaking through a mask than without it. This he attributes to the lodgment upon the mask of the bacteria from the air, and their projection through respiration.

New Method of Excision of the Head of the Femur.—The various methods employed in excision of the head of the femur are rejected by F. PADULA (Policlin., Year X, fasc. 9, 1903), upon the ground that they either injure the muscular attachments or jeopardize the great vessels. A method has been devised by him which he thus describes: The anterior margin of the tensor vaginæ femoris is sought, and an incision along this line is made; thus bringing the operator down to the interstice which is bounded externally and posteriorly by the tensor vaginæ femoris and glutens minimus, and internally by the rectus femoris, psoas and iliacus. The capsule of the joint may then be readily reached by thrusting the finger through this interstice and pushing the muscles to either side. The neck and head of the femur are next exposed through a wide incision of the capsule; and after the bone is dislocated by extension and external rotation, the head is excised.

HISTOLOGY, PATHOLOGY AND BACTERIOLOGY.

Tuberculosis in the Turtle.—Spontaneous pulmonary tuberculosis in cold-blooded animals has heretofore never been observed. Lately, however, a well-marked case of tuberculous invasion was seen by F. F. FRIEDMAN (Deut. med. Woch., Jan. 8, 1903) in a specimen of large sea turtle (*Chelonia corticata*). Examination showed one lung dotted with miliary tubercles in great numbers. There were found also several cheesy nodules and a cavity about four by five cm., which did not communicate with any bronchus. Sections showed bacilli which presented all the characteristics in form and staining properties of Koch's bacilli. They permeated the entire lung, filling the alveoli and destroying in many places the epithelium of the bronchi. The leucocytes seen contained many bacilli, and numerous typical giant cells were seen.

Determination of "Purin" Bodies.—By "purins" are understood those substances which contain the radical C_5H_4, the chief of which in the urine are: hypoxanthine, xanthine, uric acid, guanine and the methylxanthines. They are exogenous if derived directly from ingested foods, and endogenous when resulting from the decomposition of the nuclein in the course of metabolic processes. The knowledge of the endogenous factor in an individual and repeated estimations of the purins in the urine of twenty-four hours will enable one to regulate exactly the alimentary régime. This endogenous factor is determined by subtracting from the total purins, the figure representing the ingested food and obtained from published tables. For the determination of the total purins, J. WALKER HALL (Archives Générales de Médicine, November, 1902) uses two solutions. Solution No. 1 is:

Ludwig's double magnesia solution	100 c.c.
20 per cent. ammonia water	100 c.c.
Finely powdered talc	10 gm.

Solution No. 2 is:

Silver nitrate	1 gm.
28 per cent. ammonia water	100 c.c.
Powdered talc	5 gm.
Distilled water	100 c.c.

Remove any albumin from the twenty-four hours' urine, and in a graduated tube mix 20 c.c. of No. 1 with 90 c.c. of urine. The phosphates are thus precipitated. Then one adds 20 c.c. of No. 2, the precipitate from which contains chloride of silver and a silver combination of the purins. The silver chloride dissolves in the excess of ammonia, more ammonia being added if flocculi appear. At the end of an hour the purins are all precipitated, and easily distinguishable from the underlying phosphates by their yellow color, are read off on the graduated tube.

Etiology of Tuberculous Peritonitis.—Like many of the beliefs of our ancestors, the belief in the inheritance of tuberculosis has been scoffed at and denied. EDMUND CAUTLEY (Med. Press, Dec. 31, 1902), divides this much-mooted condition into the adhesive type; second, into the peritonitis with effusion of (*a*) serum, (*b*) pus; third, caseous or ulcerative peritonitis. Cast what doubts we may upon the value of inheritance, there is no getting round the fact that the child is the product of inheritance modified by environment. The disease reaches that child by being directly transmitted from the parent through the medium of an infected germ cell or maternal blood supply, or the child inherits a peculiarity or delicacy of structure which renders it liable to invasion. It is almost inconceivable that the microscopic spermatozoon can actually contain the bacillus even in the spore form and convey it to the ovum—much more probably the infection of a sperm cell would impair its nutrition and render it valueless for impregnation. Furthermore, it is highly doubtful that an infected ovum would be satisfactorily impregnated and developed. Maternal inheritance, however, stands etiologically on a different footing. For nine months of prenatal life the child's blood is the mother's. Truly this blood is filtered through the placenta, but even human filters may be imperfect, and supposing a tuberculous mother, why should the placenta remain free from infection any more than any other organ. This infection may be of so mild a character as not to produce abortion. Gärtner, by inoculating the mother intravenously, produced tuberculosis in young mice. Bacilli have been found in the human fetus, removed by Cesarean section from a tuberculous mother. Many infants show such advanced conditions of pulmonary tuberculosis at birth as to make fetal infection an almost necessary explanation. As to the identity of the human and bovine bacilli, many observers have succeeded in showing that human bacilli will produce tuberculous lesions in calves; and Koch's negative results are probably due to using too small doses of insufficient virulence. Milk is the diet of a child for the first year or more of life. There is no doubt that much milk is fed into infants' stomachs which contains great numbers of tubercle bacilli, yet the disease is a rare one. It is, however, much more prominent among the poor than the rich, although the former get less cow's milk. Autopsies show that 59 per cent. of tuberculous children have tuberculous mesenteric glands, and that 80 per cent. of these show ulceration of the bowels. From this it would seem that 47 per cent. of tuberculous children have this ulceration. In conclusion he urged that all forms of tuberculous peritonitis are probably not due to the same breed of bacillus. Both clinically and pathologically, there are good grounds for supposing that the bacillus varies in its effects, according as to whether it is bovine or human.

Tests for Albuminuria.—A few years ago a new method of detecting minute quantities of albumin in the urine was published by Pollacci. His reagent contained tartaric acid, 1 gm., mercuric chlorid, 5 gm., sodium chlorid, 10 gm., in 100 c.c. of water. To this is added 5 c.c. of formaldehyd. It was claimed that this reagent showed a sensitiveness of 1 to 370,000. A series of careful tests of the method have been made by G. LINDSAY and W. J. GIES (Am. Med., Jan. 31, 1903). They found that simple, compound and albuminoid proteids were all precipitated by this reagent. The test is too delicate for ordinary clinical purposes, since the normally occuring urinary proteids are precipitated. Non-proteid substances occurring in the urine in health and disease, are probably also precipitated by the mercuric chloride. The test has therefore no differential value and must be regarded as a general proteid precipitant rather than as an albumin detector.

The Pancreas in Venous Cirrhosis of the Liver.—In certain pathological processes the pancreas is united by close bonds with the liver. This is illustrated by a study of eight cases of venous cirrhosis of the liver, by M. KLIPPEL and E. LEFAS (Rev. de Méd., Jan. 10, 1903); in all of these cases a greater or less degree of pancreatic sclerosis was present. It is not yet definitely proved that this is an invariable association; but where pancreatic sclerosis is not readily found, it should be remembered that it may be present in some parts of the pancreas to the exclusion of others, and that negative findings prove nothing unless a large number of sections have been examined. In preparing a human pancreas for section, the processes of fixation and hardening ordinarily utilized in the treatment of other organs will not suffice. Formalin, Müller's fluid, or sublimate solutions will not arrest the autodigestion of the gland; powerful and rapid coagulants must be employed, and the best is 95-per-cent. alcohol, renewed frequently and used in liberal quantities, the glandular fragments being small. For imbedding, celloidin may be used, and in staining, good results will be obtained by means of hematoxylineosin or of thionin. During the autopsy it is necessary to place a fragment of pancreatic tissue in some acid or in Marchi's fluid in order to discover fatty degeneration. Histologically the pancreas may present in these cases a perilobular or intralobular hyperplasia of connective tissue; or the hyperplasia may be most marked surrounding the acini. The most frequent form of hyperplasia is the intralobular, the gland being divided by fibrous plaques into groups of from 10 to 20 acini. Associated with this marked intralobular growth is usually an increase of connective tissue surrounding the individual acini; interlobular changes may be present in addition to the other forms. While the initial sclerotic changes are probably located about the ducts, it is rare to discover marked degrees of connective tissue growth in these localities. The islands of Langerhans are more resistant than other parts of the pancreas, but they, too, may present a thickening of their trabeculæ. The cellular or parenchymatous lesions which occur are: (1) Hypertrophy of acini, with enlargement of nuclei and enhanced staining reaction; (2) disorientation of cells within certain acini; (3) granular degeneration; (4) fatty degeneration. The changes in the pancreas do not follow a parallel course with those occurring in the liver and spleen. In most cases the sclerosis of the liver is more advanced, but this relation was in some cases reversed. In every case, the new-formed connective tissue in the pancreas is of the adult type, very poor in nuclei, while in the liver a younger type of connective tissue is not infrequently found. In most cases the term cirrhosis of the liver can be used with propriety, as referring to the most important pathological and clinical localization; however, the pancreas may be altered as much as or more than the liver in some cases, and the pancreatic lesions cannot be considered as the mere effect of the hepatic disease. In fact alcohol, the common cause of the disease under consideration, acts simultaneously on the liver, the spleen, the pancreas and the alimentary canal.

A New Differential Stain for the Bacillus Diphtheriæ.—After protracted use of Neisser's method of staining the diphtheria bacillus, bacteriologists agree that it is of limited value. In direct swabbing it is reliable in 60 per cent., and in cultures on blood serum or Kanthaks' agar of more than 24 hours' standing, it is not reliable. After experimenting for a stain of wider application, J. W. PECK (Lancet, Jan. 10, 1903), has offered the following to supply the need partly: The stain is Loeffler's methylene blue, and, as a counterstain, Neisser's brown. The plate film is spread as usual, fixed in the flame, stained with Loeffler's methylene blue for three or four seconds, quickly washed, counterstained with .02 per cent. Vesuvius, aqueous, solution for 30 seconds. Again quickly washed, dried, and mounted in Canada balsam. The film may be treated on a slide and stained without the use of a cover glass. It is convenient to have two very wide-mouthed bottles filled with the stain, and simply dip the films into these bottles for the proper time. This technic gives a better result in all instances in which Neisser's acetic acid stain has been used, and it has this great advantage—that it is reliable for staining the Klebs-Loeffler bacillus from a culture on blood-serum several days old.

Organism of Dermatitis and Coccidioides.—In reporting a case of this rare disease, D. W. MONTGOMERY, H. A. L. RYFKOGEL and HOWARD MORROW (Jour. of Cut. Dis., Jan., 1903) described the organism as follows: In the tissues it is spherical, surrounded by a clear capsule of double contour, with its outer wall covered by spines, visible only in fresh specimens. The smaller capsules have clear or granular contents, and the larger are filled with endogenous spores. Some of the latter have a large, central clump of granules. The spores are circular, clearly defined, and highly refractive. No micropyle has been found in the capsule, as in coccidia, and no budding or mycelial forms in the tissues. Frequently, when stained with carbolfuchsin, the capsules resist decoloration with acid. Beside absence of budding, a great difference between this fungus and the blastomyces is the greater the size of the body, the greater the number in the tissues. It grows on all ordinary media, liquefies gelatine, is aerobic, and forms no gas on any of the sugars. In cultures of coccidia-like bodies it was found, as in the tissues, that no budding forms were observed.

Intravascular Antisepsis.—Historically the idea that drugs might advantageously be administered by direct injection was started by Sir Christopher Wrenn in 1656. J. M. FORTESQUE-BRINKDALE (Lancet, Jan. 10, 1903) has been carrying out a number of experiments on animals in the matter of intravascular injection of antiseptics, employing bichloride of mercury, oxycyanide of mercury, formic aldehyde, chinosol, a mixture of formic aldehyde and chinosol, and finally, taurogolate of sodium, as well as protargol. From these experiments, he offers the following suggestions. (1) That rabbits injected daily with non-toxic doses of oxycyanide of mercury, formic aldehyde and chinosol, protargol or taurogolate of sodium are not thereby protected from the usual effects of a previous inoculation of the virulent anthrax. (2) That chinosol and formic aldehyde in large doses (toxic) so depressed the rabbits infected with the pneumococcus that they died sooner than the untreated animals. Generally, then, it may be said that at present there is no experimental evidence which would warrant the assumption that the course of septicemia in animals may be influenced favorably by the intravenous injection of antiseptic substances, and that the only result to be obtained by the present stage of treatment beyond the maximum nontoxic dose is to hasten the death of the animal. In view of the results described in this paper and those obtained by informed investigators, it seems useless to continue trying to apply clinically a method which, while by no means free from special danger and difficulties, is at present unsupported by any experimental evidences either as to its present advantages or future prospects.

Streptothrix Pyemia.—An interesting case is reported by G. ENGLEHART and M. LÖHLEIN (Deut. Arch. f. klin. Med., Vol. 75, Nos. 1 and 2) of a general pyemia in a young man with fatal result. Autopsy showed localized abscesses in all internal organs. In the pus from these and also in the vessel-walls could be demonstrated a variety of micro-organism which was probably a streptothrix (actinomyces) but of unknown species and biological relations.

Iron in the Urine Under Physiological and Pathological Conditions.—Normally the urine contains iron to the extent of an average of .983 mg. per diem, according to A. NEUMANN and ARTHUR MAYER (Hoppe-Seyler's Zeitschr. f. Phys. Chemie, Dec. 20, 1902). In various pathological urines there was found a distinct increase in the iron-content. Thus the daily quantity in milligrams was determined in individual cases of disease as follows: Chronic interstitial nephritis, 1.091 and 1.605; typhoid fever, 1.290; facial erysipelas, 1.688; cholelithiasis, 1.233; hepatic cirrhosis, 2.092; biliary liver cirrhosis, 1.386; carcinoma of the liver and stomach, .997; and in a case of alcoholism, 8.015 and 6.428 a week later. The determinations in the cases of typhoid and erysipelas are in conformity with the law discovered by Salkowski that febrile urines contain an increased content in iron. The increase in the cases of hepatic disease is perhaps explained by the atrophy of the liver cells. Of great interest is the enormous elimination of iron in an individual who without any organic disease was accustomed to drink an extraordinary quantity of alcohol, and had an abundant paniculus adiposus. In cases of diabetes mellitus there is a great increase in the daily output of iron. Of greater interest is the fact that the quantity of iron is proportional to the quantity of sugar, 2½ mg. iron corresponding to every 100 g. sugar. In a case of diabetes complicated with carcinoma of the pancreas, there was a still greater increase in the iron-content. The authors believe that the discovery that the quantity of iron in the urine rises and falls with that of sugar, may be of value in the investigation of the source of urinary sugar. Some time ago Neumann observed that the thymus-nucleinic acid prepared by him contains an appreciable quantity of iron. Since the earlier investigations of Kossel and Neumann in the splitting of this acid revealed the presence of considerable quantities of carbohydrate through the discovery of levulinic acid, it seems probable that in thymus-nucleinic acid is to be sought the source of the pathological production of sugar.

NEUROLOGY AND PSYCHIATRY.

Chorea Electrica.—The name "chorea electrica" has been used by three independent observers, namely, Dubini, Henoch and Bergeron, to describe a condition which is further elucidated by L. BRUNS (Berl. klin. Woch., Dec. 22, 1902). The condition in question is not related to Sydenham's chorea nor are the muscular contractions which are its characteristic feature the result of electric shock or stimulation. The name "chorea electrica" owes its invention to the fact that in the disease under consideration muscular contractions occur which resemble closely those produced by a strong faradic current. The cases of both Henoch and Bergeron occurred in nervous and anemic children between the ages of seven and fourteen. The parts commonly affected are the head, shoulders, neck and arms; rarely a single extremity is attacked or unilateral contractions take the place of the typical bilateral affection. Bergeron's cases were promptly cured; but Henoch describes the disease as an obstinate one. This difference of opinion is explained by Bruns on the score of etiological variations. Bruns, indeed, undertakes to classify cases of chorea electrica on pathogenetic grounds as respectively hysterical and epileptic; and he adds a third group of cases which may be regarded as chorea electrica proper. The latter closely resembles certain forms of convulsive tic, and it is entitled to distinct classification, according to Bruns, namely on account of the characteristic localization of the contractions, and because the cases reported are limited to certain years of childhood. From paramyoclonus multiplex Bruns professes to be able readily to distinguish chorea electrica; paramyoclonus may attack both sides of the body, but in typical cases the distribution is not symmetrical and the contractions are not synchronous; moreover, paramyoclonus may affect individual bundles of muscular tissue, or single muscles which are not subject to isolated voluntary contractions. In the epileptic variety of chorea electrica there is usually a history of classic epileptic paroxysms, with interparoxysmal attacks of muscular twitching with the characteristic distribution; or there may be, in addition to the latter symptom, only brief pauses in consciousness which require close watching for identification. The hysterical form of chorea electrica is very difficult to recognize, inasmuch as in this condition, as indeed in all forms of hysteria in children, the stigmata of hysteria may be lacking. But the prognostic importance of diagnosis is great, for while hysterical cases of chorea electrica yield to proper treatment, those which are nearly allied to convulsive tic are refractory. In all cases of chorea electrica it is important first to exclude epilepsy. That being done, every remaining case should be handled as one of hysteria, even if the diagnosis cannot be definitely established. Bruns recommends the removal of the child to a hospital, the practice of "intentional neglect" of the symptoms with the idea of convincing the child that its symptoms are of no particular consequence. While neglecting the convulsive attacks as such, the treatment should not disregard the patient; diet should be carefully studied, and hydrotherapy and electrotherapy may be employed.

Lumbar Puncture in Chronic Neuralgia, Secondary to Zona.—It is well known that intra-arachnoidean injections of cocaine have been used successfully in the treatment of certain painful diseases of the nerves, for example, of chronic lumbago, zona and sciatic neuralgia, but during his researches into the lymphoctosis of the spinal canal, J. ABADIE, of Bordeaux (La Sem. Méd., Dec. 31, 1902), has been convinced that in these attacks of zoster, simple lumbar puncture with evacuation of a few cubic centimeters of spinal fluid is just as efficacious as cocainization itself. In a young woman afflicted with scapural humeral zona, in the hospital during the service of Prof. Peteus, Abadie did not, for particular reasons, inject the cocaine, but satisfied himself by withdrawing about 20 c.c. of the spinal fluid. During the following days he was hardly surprised to see the eruption rapidly decrease, and the pain moderate at the same time. Since then this observer has had occasion to treat in the same manner two other cases of neuralgia accompanying zoster, which showed itself respectively at five and six months. In each of these examples of the disease, simple evacuation of a small quantity of the subarachnoidal fluid, of 17 c.c. in the first, and of 25 c.c. in the second, was sufficient to cause complete disappearance of the pain. Evidently these three patients presented hypertension of the cerebrospinal fluid, as the quantity of fluid which he drew off by puncture was about enough to make the pressure return to normal.

PEDIATRICS.

Administration of Heroin in Children.—Belladonna and kindred drugs have for years been the sheet anchor in conditions in children requiring an antispasmodic, sedative or analgesic. Based on his own experiences, N. G. PRICE (Phil. Med. Jour., Feb. 14, 1903) finds that they are uncertain, often cause alarming toxic symptoms, bring on a disagreeable parching of the mouth, induce constipation and disorder digestion. He recommends the use of heroin hydrochloride as a substitute and gives it in doses of $^1/_{240}$ gr. to a child of one year. It is non-irritating and possesses antispasmodic properties more potent than the belladonna group or the bromides. The only untoward symptom has been vertigo of a transitory character. It is a sedative to all mucous membranes, particularly to those of the respiratory and genito-urinary tracts. It diminishes peristaltic hyperactivity and hypersecretion of the intestine. The drug is also rapidly absorbed from the rectum and can be so given in double dosage than by mouth. Complete oxidation takes place in the system and no cumulative action results. Heroin is not adapted for mixtures or for hypodermic use because of its insolubility. The hydrochloride is preferable, is soluble and readily absorbed, is compatible with the expectorants and the other antispasmodic, analgesic and sedative remedies.

Interstitial Pneumonia.—The so-called interstitial pneumonia, or, as he prefers to call it, pulmonary hyperplasia with secondary cirrhosis, is, according to A. JACOBI (Arch. of Ped., Jan., 1903), a frequent and frequently independent disease. The majority of writers have considered it rare, secondary, and of importance as a permanent and progressive lesion. The diagnosis at first is difficult, but must be suspected when recovery from what we have thought an ordinary pneumonia is incomplete or much retarded, or when a child has a number of attacks of pneumonia. Independent interstitial pneumonia is mostly in an upper lobe, pleuritis mostly over a lower. The presence of serum or pus makes the diagnosis of pleuritis easy, but deformity of the chest may result from either condition. In tuberculosis there are few cases with a marked lesion at one apex without some signs at the other, and in children tuberculosis is most likely to involve all the lobes. It is also accompanied by cough and expectoration. In interstitial pneumonia there may be neither. Percussion elicits dulness and resistance to the percussing finger. Induration of the lower lobe may raise the liver dulness higher than normal. Secondary emphysema and the cavities of fibroid phthisis yield their well-known physical signs. On ausculation of the pneumonic area the respiration in the young is vesicular and strongly puerile; with bronchitis there may be râles. After a while the respiration becomes bronchial, feeble, and continues so to the end. In many cases there is interrupted inspiration. The heart may be drawn up or to one side, or may be exposed to percussion by the retraction of the lung. In acute cases there may be high fever persisting for weeks, but in most cases the fever does not last. When the induration is fully established there is no temperature. Deformities of the chest are frequent, because most of the patients are young with yielding ribs. In serious cases the circumference of the diseased side is diminished. These cases described by the author do well and live many years. They are to be distinguished from the complicated type mostly spoken of, by writers, in which there is frequent and harassing cough, and copious sanguineous or fetid expectoration. Most text-books describe only adult cases with their unfavorable prognosis, but the vast majority of cases begin and end in childhood, and this is the time for preventive measures. Good food, fresh air, and the frequent application of cold water to the skin of the growing child are the best preventives of colds. Puny, undersized children should have animal food and cereals as well as milk. Arsenous acid, one milligram (gr. $^{1}/_{65}$) may be given after meals for months; phosphorus in doses of ten drops of the official elixir three times a day may be given to a year old baby for three months. Children of five or six years may need mercury or iodide of iron; quinine is unsatisfactory. When the heart muscle is feeble, the equivalent of a grain of digitalis daily in small doses for months will improve the condition of a year old child. In the acute cases, remember that recent cell proliferation and recently formed connective tissue are absorbable, therefore give iodine or iodide. Bathing at 90° to 95° F. has a good effect. In some young, in many adults, the further development may be into emphysema, asthma, bronchiectasis, caseous degeneration, abscess, gangrene, cavities and death.

EYE, EAR, NOSE, AND THROAT.

Intracranial Complications of Septic Osteitis.—Pachymeningitis externa is the first and least important complication of septic ear disease, according to F. EVE (Lancet, Jan. 17, 1903). The extrapurule abscess is, however, more common, especially over the sigmoid sinus, and more severe. Its treatment requires mastoidectomy, the pus being reached by enlarging the abscess in the bone backward along the base line for low or upward for high-seated pus. Thrombosis of the lateral sinus is one of the fatal complications and requires the foregoing treatment also. Septic leptomeningitis is a very serious secondary condition. Serous meningitis is less common. Then follow posteriorly nasal meningitis, and, as another rare result, the cerebellar abscess belongs to the late complications as postcerebellar abscess. The inflammation of the meninges requires the well-known medical management, while abscess of the brain, either the fore or hind brain, demand surgical interference, consisting chiefly in evacuating through the shortest and safest possible route.

Electricity in Deafness.—The use of electrolysis in Eustachian salpingitis with stricture is commented on by E. MATLACK (Am. Med., Feb. 7, 1903) who reports a series of 75 cases treated by this means. These include all cases of deafness applying for treatment and were not selected. The autophonia and tinnitus in all cases were cured, limit of tone perception increased, and the general hearing improved, results due the author believes to the permanent opening of the Eustachian tube. A galvanic current was used, from one to five milliampères, the positive sponge being held in the hand and the negative passed through an insulated Eustachian catheter of about 35 mm. into the middle-ear cavity. Treatments lasted about one minute each, and successive bougies are passed until the tube reaches its normal caliber. Excluding purely labyrinthine conditions, the treatment has been of service in all other forms of deafness. Supplementary measures should also be done and septum irregularities and hypertrophied turbinals attended to. After the normal caliber of the tube has been restored by electrolysis, a further use of middle-ear vaporization will be found of value.

OBSTETRICS AND GYNECOLOGY.

Chorion Epithelioma (Deciduoma Malignum).—This is a rare but rather fatal disease, unless its presence is made out early by the practitioner. The following conclusions as to the nature of the growth are offered by D. KREWER (Zeitschr. f. Gerburtsh. u. Gyn., 1902, B. 48, H. I.) This epithelioma of the chorion belongs directly to the malignant type of tumors, and is comprised of the overgrowth of epithelium from the chorionic tufts. It is composed of two varieties of cells which are physiologically connected with these villi, and gather in the tumor around the walls of blood vessels, which appears to be an explanation for the enormous bleeding which is present in this disease. The relation of the two varieties of cells in the tumor is analogous to that which is found in the normal chorionic villi. Metastases appear to occur by way of the blood current. Oncologically, the tumor belongs to the class of carcinoma.

Extraction in Narrow Pelves.—Disproportion between the size of the child and the birth canal, especially the bony canal, constitutes one of the greatest difficulties which confronts the obstetrician. Dr. KULL (Arch. f. Gyn., 1902, B. 76, H. 2) makes the following conclusions as to treatment. He first recommends the intra-uterine rubber bag or balloon as a means of dilating the os, claiming for it the following essential conditions. The child's head must be mobile. The os must admit two fingers to permit the introduction of the bag. The bag stimulates the pains, indeed, excites them when they are absent, thereby differing from the kolpeurynter. It serves well for a rapid dilatation of the narrow os, is a good substitute for the bag of waters, especially when this has ruptured prematurely, acting in the same way as the natural bag to stimulate the pains. It is of great value in multipara. It should be used instead of the kolpeurynter, when this fails. It is serviceable as a tampon in placenta previa. For a complete dilatation of the os, the rubber bag must contain about one pint of fluid. The most serviceable form has a rubber tube attached, which makes it possible to exert considerable traction upon it. As to the rest of the treatment, it consists of (1) version and extraction in narrow pelves, with children of moderate size, may be carried out successfully for mother and child, in flat and flat rachitic pelves, when the conjugate diameter is 9 cm., and in uniformly contracted pelves, when the same diameter is 9½ cm.; (2) if the woman is a primipara, version should be postponed to the last moment and altogether avoided, except in the presence of insurmountable indications from both mother and child; (3) for primipara, conservative treatment is best. In multipara, with narrow pelves, which approach the measurements indicative of version, if the head lies well, conservative treatment is advisable; (4) in multipara with narrow pelves and a good engagement of the head, version with extraction is a valuable means of interference, provided the practitioner is skilful. (5) Version and extraction in narrow pelves is limited to those cases where, from the standpoint of the mother, Cesarean section and symphysiotomy would have only relative indications.

THERAPEUTICS.

"Esanofele Bileris" in Malaria.—The effect of this preparation—a compound in pill form, of quinine, arsenic and iron with bitter extracts—upon malaria, has been carefully studied by J. F. Benitez and G. Cocchi (Rev. Méd. Cubana, Jan. 15, 1903) in twenty cases; and the results obtained coincide with the favorable effects reported from its use in Italy and elsewhere. Malaria in any form was found to yield to its influence within a few days, and always less than a week; six pills daily sufficing to break up the most obstinate attack, even when quinine alone had failed. It is said to be devoid of the undesirable effects of quinine; a slight tinnitus alone occurring in one patient out of the twenty. In those pernicious cases in which rapid absorption is essential, injections of quinine hydrochlorate might, in the authors' opinion, be advantageously supplemented by the use of esanofele.

Treatment of Metatarsalgia with Electricity.—The condition known as metatarsalgia or Morton's disease, which, according to the description given by Morton, is characterized by intense, continuous or periodical pain in the metatarsal region, sometimes involving the whole foot, calf of the leg and knee, but always having its point of greatest intensity over the head of the fourth and sometimes the third metatarsal bone, has, in the majority of cases, proven most rebellious to treatment. F. Piccinino (Ann. Elet. Med. e Ter. Fis., Dec., 1902) has effected a cure with the galvanic current in such a case, of seven years' standing, in which all other remedies had failed. One electrode, connected with the negative pole, was placed over the anterior inferior third of the thigh; the foot was then placed in a vessel containing tepid water and the positive pole introduced in it. A continuous current of fifteen milliampères was then used for ten minutes; and the relief experienced by the patient was sufficient to enable him to walk with much greater ease, and procure him a restful night. The following day the intensity of the current was increased to twenty milliampères, and treatment was prolonged to fifteen minutes. This was continued for five days, during which improvement was constant; and at the end of that time, pain disappeared entirely at night, and was much lessened during the day; though increased by walking. On the following two days, injections of one-half of a cubic centimeter of two-per-cent. cocaine hydrochlorate were given, as advised by Verger; galvanization being continued as before. Complete relief of the pain was effected, and after a lapse of two months, there has been no return.

Local Treatment of Syphilitic Lesions.—Certain syphilitic lesions, for example, those developing about general treatment of this case, and began instead in- the eye, tongue or face, may be especially painful or dangerous. The experience of Ch. Bouchard (La Presse Méd., Dec. 31, 1902) leads him to believe that such lesions can be promptly arrested or rapidly reduced by local treatment, which he proposes, not as a substitute for, but as an aid to constitutional treatment. In one instance a man suffering from ulcerated gumma of the side had been treated for a long time without success by mercury and potassium iodide, separately and together. Inunctions had been practised in the usual localities, which were distant from the ulcerated lesion. Subcutaneous injection of mercurial salts had also been tried without success. Bouchard abandoned general treatment of this case, and began instead of injections about the gumma itself, beginning with one c.c. of iodide of potassium, and following this with double quantity. After seven injections the treatment was stopped, as the gumma had cicatrized. In a second case where constitutional treatment failed, cicatrization of a large gumma was obtained after three injections of six cgm. of KI. Another case which yielded to local treatment of the same character was one in which neuritis associated with trophic ulcer was attributed to syphilis. The signs of neuritis disappeared and the ulcer was healed. Again, a woman suffering from a grave attack of syphilis presented deeply ulcerated condylomata on various parts of the body. After a month of mixed treatment absolute intolerance set in; the stomach would no longer endure the iodide of potassium, and large swellings were caused by the injection of benzoate or iodide of mercury. General treatment was discontinued and potassium iodide and the biniodide of mercury were injected locally. In three days a condyloma was cured after the injection into its base of 2/10 mg. of biniodide of mercury. Another ulceration yielded after six injections of the same dose.

Calcium Hydrate in Diabetes.—Working upon the basis of the well-known inhibitory influence of alkalies upon the saccharifying power of those body-fluids by which starch is converted to sugar, A. Capparelli (Arch. Ital. Biol., Vol. XXVIII, fasc. II, 1902) has studied the effect of the earthy alkalies upon starch and has successfully applied the principles deduced from the work to diabetes mellitus. In repeated tests, he found that if a small amount of lime-water, sufficient to give a slight alkaline reaction, were added to starch paste, it might be mixed with saliva or pancreatic juice, and allowed to stand a prolonged time, without the usual transformation of cooked starch into glucose taking place. The author brought about a gradual reduction and final disappearance of all diabetic symptoms, including elimination of glucose by the urine, in several diabetic cases occurring in his personal practice, through administration of lime-water in large quantities before and after meals. Two cases are reported in detail, which were so treated under hospital supervision; a diet of meat, bread, bouillon with rice, wine and milk being allowed daily, and 300 c.c. of lime-water given during the course of each day. This treatment was continued for a month; the lime-water being gradually reduced to 200 c.c. At the end of that time, sugar was reduced to one-half in one case, and to a minimum in the other; the amount of urine eliminated being proportionately decreased. The mechanism of the action of calcium, the author believes, may depend upon the neutralization of fluids acting upon starch; as in previous work, he found the normal reaction of saliva to be acid; the acidity being chiefly due to lactic acid. He also holds it probable that the reaction of the pancreatic juice is acid in the body as it is outside of it; for, while it mingles with the alkaline bile in the duodenum, the activity of the chyme is probably too great to be overcome by the alkalinity of the former. The influence of calcium in diabetes may also, in the author's opnion, be allied to its known power to precipitate starch paste from its solution, as it is acknowledged that chemical action and reaction take place solely in dissolved substances, and not in those which are precipitated. From the work done, Capparelli concludes that lime-water is not only curative when administered to diabetics in sufficient quantities, but permits the addition of starchy food to the diet.

Morphine in Uremic Convulsions.—The use of hypodermic injections of morphine in this condition was recommended by A. L. Loomis many years ago, especially in the uremia of acute nephritis. The importance of the subject has led the editor of the Therapeutic Gazette to obtain expressions of opinion from leading medical men, which are published in the form of a symposium (Jan. 15, 1903). JAMES TYSON believes that only cases of uremia from acute parenchymatous nephritis, whether due to pregnancy or other causes, are thus benefited. In uremia due to chronic interstitial nephritis, however, morphine in any form is harmful, deepening the coma and making relief more difficult. As the diagnosis may be difficult, especially when suddenly called to a case, he is cautious in giving morphine. He believes that in parenchymatous nephritis, a larger number of cells are capable of eliminating and therefore the dangers of the drug are diminished. W. H. White, of London, rarely uses it, preferring to give chloroform if the convulsions are severe. William Ewart, London, would give morphine if chloroform could not immediately be resorted to. The urgent danger being a continuance of the convulsions, that agent which will check them most effectually is for the moment the best remedy. Even if chloroform had been administered and permanent relief had not resulted, he would supplement its action by a small dose of morphine. It has no curative value and should not be substituted for active eliminative measures. Frank Billings, of Chicago, thinks it is of value in uremia in small doses as a cardiovascular tonic, where there is dilatation of the heart with vasomotor stasis and a tendency to pulmonary edema. Large doses defeat its purpose, and if used where the cardiovascular tone is good it may lessen the same and be harmful. John H. Musser is undecided regarding this procedure. The drug is of value in relieving the restlessness often found aften convulsions. He has had good results in uremic asthma. James M. Anders believes that it is of great value in uremia from acute nephritis and has seldom observed untoward after-effects. He does advise a repetition of the effective dose (gr. ¼ to ⅓) but relies on other measures. In all other uremic manifestations morphine should be withheld since it favors the development of uremic poisoning.

Salicylate of Sodium in Glaucoma.—This remedy is advocated by H. GIFFORD (Ophthalmic Record. Dec., 1902). He gives one grain of the salicylate for each pound of body-weight during the waking hours, 7 A.M. to 10 P.M. The main difficulty is in the tendency to collapse and gastric disturbance, which he obviates by making the patient go to bed after the third or fourth dose, the doses being given an hour to 1½ hour apart, dissolved in four parts of brandy. He allows the patient to go without the drug every third or fourth day, and requires the head to be wiped dry when perspiring. Each dose of salicylate and brandy is given in one eighth of a glass of water. Most important of all drugs in non-specific inflammations of the iris, ciliary body, sclera and episcleral tissue, acute glaucoma, sympathetic ophthalmia, interstitial keratitis and herpes of the cornea. By studying the elimination through the urine he determined that at no time was the amount of salicylate present in the blood stronger than 1 to 52,529. A strength of 1 to 1,000 to 1 to 500 is needed to be germicidal. He accepts Oltramare's theory that local depletion is produced by general capillary dilatation, which may check bacterial growth.

The Influence of Modern Drugs in Gout.—There is no nation better qualified than the English to write positively on this important question of metabolic disorder. WILLIAM BAIN (Brit. Med. Jour., Jan. 31, 1903) reaches the following conclusions after a review of extensive investigations: (1) There is an increase in albumin coincident with the development of a subacute attack of gout; (2) a preponderance of serum globulin over serum albumin is observed; (3) there were present in blood the peculiar leucocytes described by Chalmers Watson; (4) lithium benzoate and urotropin were ineffective as regards uric acid excretions; (5) tartrate of piperidin, lysidin, and sidonal in the order named showed an increasingly augmentive effect on the uric acid excretions; (6) the excretion of uric acid was diminished during the administration of colchisal and the conjugated sulphates increase; (7) the solvent action of tetra-ethyl ammonium hydrate on sodium bi-urate probably depends upon its alkalinity. This last observation is of great interest, because curiously enough, the patient was of the opinion that he derived greater benefit from colchisal than from any of the other drugs.

Treatment of Rheumatoid Arthritis.—Many observers have claimed that this disease is practically incurable. Some have taken a more hopeful view and F. B. BISHOP (Jour. of Adv. Therap., Feb., 1903) believes that much can be done even in advanced cases with diet and electricity. He recommends a liberal diet including beef or mutton, very little bread, milk, eggs, and water in abundance. Static electricity is applied as sparks to the joints or to the nerves, and also as currents and sparks to the spine. If there is effusion in the joints the galvanic current may be applied at intervals to the boggy surface so as to produce a blister. The extensor muscles are treated by the interrupted galvanic or interrupted induced current by placing the patient's hands and wrists in a water bath connected with the negative pole of the battery, the other pole being connected with a large dispersing pad over the spine. Mild hepatic stimulants may be given and for gastric acidity bicarbonate of soda in hot water before meals. By the judicious use of electricity in conjunction with dietetics the local nutritive function of joints, skin and muscles is increased, and also that of the organs of secretion and excretion. He believes that the cause in most cases is abnormal metabolism and that a rheumatic or trophic nerve center disturbance is not an etiological factor.

Screen for X-ray Work.—To obviate the use of sheet-lead covers for protecting the patient during the application of the rays, G. E. PFAHLER (Phil. Med. Jour., Feb. 14, 1903) recommends the employment of an adjustable screen which he has constructed as follows: The head clamp is removed from an ordinary photographic headrest and the thumbscrew is attached to a circular board 18 inches in diameter which is covered with sheet lead. An opening is made in the center, five inches in diameter, over which a series of diaphragms can be fitted. When this is placed near the tube practically all the divergent rays are cut off and the light reaches the part to be treated in the form of a cone which may be regulated by the various diaphragms and the relative positions of tube and screen. The screen can be used in both vertical and horizontal positions and also serves as an electrical conductor.

Perirenal Fatty Tissue.—A note on the anatomic disposition of the perirenal fat, which apparently has not heretofore been described, is made by W. W. KEEN (Amer. Med., Jan. 31, 1903). He believes that its recognition greatly facilitates the finding of the kidney. Two distinct layers of fatty tissue surround the kidney: (1) that which should be called the transversalis layer of fat, and (2) the fatty envelope surrounding the organ itself. In operating, as soon as the fat bulges through the incision, if it is carefully cut through, a distinct interval between these two layers will be found which contains connective tissue. Under this is the second layer of fat and when it is torn through, the opening thus made becomes an infundibulum at the bottom of which the kidney is invariably found.

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THE PROPOSED NEW BELLEVUE HOSPITAL.

THERE was wisdom in the legislation which separated the public hospitals of Manhattan and the Bronx from the Department of Charities and vested the control of these hospitals in a separate board of trustees. Bellevue Hospital and the sick poor, for whose welfare it stands, have found vigorous champions in the new Board of Trustees under the presidency of Dr. Brannan. As a consequence of the aggressive policy of the new board, which has the confidence of the present municipal administration and of the people of the city, the new and better Bellevue Hospital, for which the NEWS and the medical profession of New York have so often pleaded, will soon replace the present inadequate structure. On February 26 the Board of Estimate authorized the erection of new hospital buildings at a cost of $3,000,000.

The new hospital is urgently needed; and yet, if the trustees and the architect would follow the lesson of experience, they will proceed with great deliberation before adopting any scheme of construction. A hospital should be built with special regard for the service for which it is intended, and the first duty of the architect is to consult those to whom this service, in all of its aspects, is an open book. So far as Bellevue is concerned, the needs of the future should be taken into account along with the demands of the present. The growth of the city inevitably will be accompanied by increasing demand for accommodations for the sick poor, and the East River site at Twenty-sixth street is an asset which should not be expended with too free a hand. If part of this site can be held in reserve for future needs so much the better. We are aware that to those whose ideal is the one-story pavilion the site will seem ridiculously small for a hospital of say 1,000 beds. But the pavilion hospital, with its pleasant gardens and its widely separated wards, is scarcely to be thought of on Manhattan Island; nor is it the only scheme of hospital construction which can provide safety and comfort for the patient and which can satisfy all the demands of sanitary science.

Hospital construction in New York City has often suffered because lay directors have ignored medical and administrative officers. We feel assured that the new Bellevue will not suffer for any such reason, since the President of the Board of Trustees is himself a medical man of liberal mind who has long been a student of hospital problems. Hospital architects are prone to attempt the impossible, having to deal on the one hand with a limited building fund, and on the other, with the demand for a definite number of beds. In the case of the new Bellevue the first thing to be considered is substantial and suitable hospital construction; and the available appropriation should be expended with due regard for right standards. Should it prove insufficient for the number of beds needed, it will be the duty of the city to provide additional funds.

The Hospital of the New York Lying-in Society, which represents the highest type of hospital construction yet attained in this city (with the possible exception of St. Bartholomew's Clinic, which is too small for comparison), cost $1,250,000, and contains about 2,250,000 cubic feet. The new Mt. Sinai Hospital, which is now nearing completion, contains about 5,000,000 cubic feet, with a normal capacity of nearly five hundred beds; it is estimated to cost nearly $4,000 per bed, but this cost includes an expensive pavilion for private patients, a nurses' home, a laboratory for pathological research and a dispensary building. Allowing for the different conditions at Bellevue, the available appropriation, under similar market conditions, will probably suffice for a modern hospital of one thousand beds.

We hope that the architects selected by the trustees of the city hospitals will not only be careful in making their plans, but that they will possess the liberality and the public spirit to expose their plans to honest criticism before the final adoption. The new Bellevue will be a great center of clinical instruction; let it be also the crowning glory of American hospital architecture.

LAVAGE OF THE STOMACH.

The ease with which a stomach-tube can be introduced and the immediate relief which follows a single washing after real suffering has resulted in the indiscriminate employment of lavage in almost every form of gastric derangement. But the results have not been uniformly good, and the pendulum is swinging in the other direction and condemnation is taking the place of the former enthusiasm. Thus do we abandon some of our valuable therapeutic measures on account of untimely abuse and their failure to prove universal panaceas.

In a study of its physiological action, G. Linossier (*Archives Générales de Médicine,* Jan. 6, 1903) finds that lavage is detersive, emptying and cleansing the stomach, that it stimulates the musculature of the stomach, esophagus and diaphragm, that it acts reflexly on other organs, has a mechanical and psychical influence, and may be employed for the application of remedies directly to the gastric mucous membrane. Its first effect on muscular activity is shown in a tendency to vomiting, but aside from this the tube stimulates peristalsis, and, in fact, the simple extraction of a test meal without lavage may excite a sluggish stomach to completely empty itself through the pylorus. The temperature of the lavage water makes a difference, cool water (indicated in asthenia) tending to stimulate, and hot water (used in pyloric spasm) acting as a sedative and antispasmodic. Reflexly it may stimulate peristalsis in the large intestine with relief of constipation.

In suggestive therapeutics lavage is a wonderful agent, the very trouble of the first introduction impressing upon the patient that it is an energetic and efficacious method of treatment. In the topical application of remedies, lavage permits the drug, for example, silver nitrate, to be brought into contact with all parts of the mucous membrane, and then allows its removal, to prevent absorption. Hayem notes the exciting bicarbonate and of two per cent. sodium sulphate, the depressant effect of 1-1000 silver nitrate, and the irritation, even resulting in hemorrhage, of a two per cent. solution of borax.

The contraindications are mainly those from which harm may come from a strong reaction to the introduction of the tube. Hemorrhage, rupture of an aneurism, and perforation of an ulcer are due to violent contractions and not to mechanical injury from the tube. The first washing is often followed by fatigue, and in the brusque evacuation of a much-distended stomach collapse has been induced. Lavage should be employed as little as possible, for if much food and gastric juice are removed it may enfeeble the organism. Its prolonged use, too, increases muscular asthenia, and may cause a gastritis. Moreover, if the gastric secretion is highly acid, removal of mucus may expose an inflamed mucous membrane to the irritating action of the acid.

Among the indications for lavage the removal of poisons is the most obvious, but it should not be employed for caustic acids or alkalies, for these can be chemically neutralized without removal, and may have so damaged the stomach as to render the introduction of the tube dangerous. The most general indication is alimentary stasis, in which, by the removal of fermenting, gas-producing material, abnormal food-destruction and auto-intoxication are prevented and the overdistended organ is allowed to contract and regain its muscular tone. Mere atony or pyloric spasm may be completely cured by lavage, but, of course, an organic stenosis of the pylorus is affected only secondarily, viz.: by the improvement of the muscular tone and the diminution of pyloric irritability. The course of a cancer per se is not influenced. With tendency to hemorrhage from a cancer or in ulcer lavage should be omitted, unless the bleeding or the tendency to perforation is increased by distention, excessive peristalsis or prolonged vomiting. Then the removal of irritating putrefactive material and blood clots is the only way of securing rest for the viscus (Ewald, Matthieu, Bourget, and others).

In mucous catarrh a morning lavage with alkaline water may be of benefit, but is generally not necessary. Biliousness, with headache, malaise, dizziness, nausea, etc., may be speedily relieved by thorough washing. The mechanical and psychical effects are most noticeable in the nervous dyspepsias, nervous vomiting, derangements of

Lavage in children is considered useless by Comby, and dangerous by Baginsky, Scherich, Lesage, and Marfan, but Epstein favors its use in choleraic disorders, and reports one thousand cases without any mishap. In acute and chronic gastro-intestinal troubles, the summer diarrheas, it certainly may be a valuable adjunct to rectal irrigation.

Lavage, then, is not adapted for universal application in stomach disease, but has definite uses and limitations.

ECHOES AND NEWS.

NEW YORK.

Glanders in New York.—It appears that a large number of cases of this disease is reported by experts from the Department of Agriculture. The condition is sufficiently grave to warrant rigid investigation.

Psychiatrical Society of New York.—A society with this name has recently been organized. Its object is to promote the interests of psychiatry and to stimulate its study. Active membership is limited to fifteen. The meetings, which are held on the first Wednesdays of November, January, March, and May, are at the houses of members. Officers, Dr. Allan McLane Hamilton, President; Dr. Frederick Peterson, Vice-President; and Dr. Pearce Bailey, Secretary.

Columbus Hospital.—Dr. G. A. DeSantos Saxe has been appointed Assistant Pathologist to this hospital. The institution is to be enlarged shortly by the addition of new buildings, the ground for which adjoining the present property has already been purchased. The erection of these new buildings will increase the capacity of the hospital to 150 beds, instead of the present 98 beds. Funds for the erection of the buildings are available, which will be sufficient to provide for a modern equipment of the new wards.

Dr. Mylan Called to Columbia's Gymnasium.—Dr. George L. Mylan, medical director of the Boston Young Men's Christian Association gymnasium, has been elected adjunct professor of physical education and medical director at Columbia University, and will enter upon his new duties next fall. Dr. Mylan is a graduate of the Lawrence scientific school at Harvard, has taken research courses in the Harvard graduates' school and was graduated from the New York University medical school.

State Examinations.—The Secretary of the State Board of Medical Examiners representing the Medical Society of the State of New York, reports as follows regarding the January, 1903, State medical licensing examinations: Total number of candidates, 103; successful, 75, or 72.8 per cent.; unsuccessful, 28, or 27.1 per cent. Of this number eight had previously passed in the medical primary branches. There was but one "honor" licentiate. Fifty-one candidates appeared for certificates of proficiency in the medical primary branches (Anatomy, Physiology and Hygiene, Chemistry) Forty-seven, or 92.1 per cent., of these were successful.

A Useful Prophylactic Slip.—The New York Pharmacal Company of Yonkers has recently issued to physicians in the shape of a series of blanks the following on infectious and contagious diseases. Precautions to be observed by patient, family and attendants.

General Information.—In smallpox, chicken-pox, scarlet fever, measles, German measles and erysipelas the *scabs and scales* are infectious.

In diphtheria, scarlet fever, measles, whooping cough, tuberculosis, typhoid and typhus fever and pneumonia, the *sputum* is infectious.

In typhoid fever, Asiatic cholera and yellow fever, *the discharges from the bowels, urine* and *vomited matter* are infectious.

Remember.—A *mild* form of any of these diseases may give rise to a *severe* form in another person; "scarlatina" and "scarlet rash" are the same as scarlet fever.

Duration of Quarantine.—Smallpox, chicken-pox, scarlet fever, measles, German measles and erysipelas until every scab or scale has fallen off. Diphtheria until throat and nose are free from the germs of the disease as determined by bacteriological examination. Typhoid, typhus and yellow fever and cholera until one week after termination of fever.

During Quarantine Period.—(1.) The sick room should be isolated (if possible at top of house), sunny, freely ventilated and maintained at an equable temperature. (2.) All unnecessary furniture, curtains, hangings or draperies should be removed. (3.) All bed linen, garments, towels, handkerchiefs, etc., worn or used by patient should be immersed in carbolic solution five per cent. for one hour and subsequently boiled, aired and sun-dried. (4.) Dishes, cups, glasses, trays, eating utensils, etc., should be similarly immersed and boiled. Remains of food should be burned. (5.) All discharges from nose, throat, eyes or ears (especially in diphtheria and tuberculosis) should be received in corrosive sublimate solution, 1-1000, and stand for one hour before throwing out. (6.) In typhoid, typhus and yellow fever and Asiatic cholera, the urine, evacuations from the bowels and vomited matter should be similarly received, thoroughly mixed and allowed to stand one hour before throwing out. Wash water closet (seat, pan and pipes) with five per cent. carbolic solution once a day. (7.) All exposed persons, including nurse, should gargle throat frequently with an efficient but non-poisonous germicide. (8.) During the peeling stage of scarlet fever, the patient's skin should be bathed each day with a mild germicidal solution and anointed with a bland antiseptic oil to prevent flying of scales. (9.) The nurse should wear only washable garments, short skirts and overshoes. (10.) In hallway should be soap, water, nail brush, carbolic solution, 2½ per cent. for hands, and antiseptic solution for gargle; here also should be kept gown, overshoes and hood for use of those compelled to enter or leave the sick room. (11.) All persons exposed to smallpox should be immediately vaccinated. (12.) The advisability of administering a protective dose of antitoxin to persons exposed to diphtheria should be determined by the physician.

After Quarantine Period.—(1.) Burn all toys, books or valueless articles used by patient. (2.) Patient sponges off with an efficient but non-irritant antiseptic solution. (3.) Receives soap and warm water bath and shampoo. (4.) Again washes and shampoos with antiseptic solution; ears and finger nails also. (5.) Gargles with antiseptic solution. (6.) Dresses in clean clothes. (7.) After arranging room for disinfection by removing outer garments, furs and leather, and sealing all apertures and crevices, nurse follows same course. (8.) All exposed persons should take disinfecting bath and shampoo and use antiseptic gargle. (9.) Instructions for fumigation and disinfection of apartments should be obtained from health authorities.

This is useful, commendable and ethical advertising.

PHILADELPHIA.

Typhoid Still Epidemic.—Typhoid fever is still prevalent to an unusual degree, there being 254 and

255 new cases for the last two weeks respectively. One-fourth of these cases were in the four wards where the water supply is furnished by direct pumps.

Women Physicians Are Successful.—It is stated that a number of Philadelphia's 186 women physicians have an annual income of $10,000 each. A large part of the entire number average between $2,000 and $3,000 yearly.

Homeopaths Ask for Institution.—For several years past the homeopathic physicians of the city have unsuccessfully asked for representation upon the boards of the Philadelphia Hospital. They now ask that the present Municipal Hospital buildings, when they are vacated for the new ones in course of erection, be turned over to them for a public homeopathic hospital for the treatment of non-contagious diseases. The Mayor requests from Councils their very best consideration of the suggestion.

Diphtheria Antitoxin to Have Place in Pharmacopeia.—It is reported that the Committee on Antitoxins of the United States Pharmacopeia, which met in this city March 7, decided to place diphtheria antitoxin in the new edition of the Pharmacopeia, which will be issued in January next.

Unusual Operation Performed by Dr. Keen.—An operation never before attempted in this country, and done successfully only four times in the history of surgery in Europe, was performed by Dr. W. W. Keen in his regular Wednesday clinic at the Jefferson Hospital March 4. The operation was for the removal of an osteosarcoma originating in the left ilium. The patient was a man forty-one years of age, in reasonably good general health. He reacted fairly well after the operation but died about 36 hours later. The sarcoma apparently developed as the result of a fall on a pavement seven months ago. Two months later the tumor was noticed and gradually increased in size until larger than two fists. The operation, which lasted one hour and twenty minutes, involved the amputation of the entire left leg and the greater part of the ilium. In all there have been 14 similar operations by European surgeons, with four recoveries.

Traumatic Myositis Ossificans.—This case was reported by Dr. W. J. Taylor. Patient was a young man of twenty-six years, whose occupation was that of schooling young hunters. About the middle of December, 1900, the patient was kicked on the anterior surface of the left thigh by a horse. The injury gave great pain but the patient was able to walk. On Monday the injury having occurred on Saturday, the patient began riding as usual, although somewhat inconvenienced. When seen by Dr. Taylor, three weeks after the accident, there was a marked swelling at the site of injury and movements of the limb gave pain. Operation three days later showed thickened periosteum and small bony particles in the overlying muscles. The periosteum was elevated and the bone beneath was distinctly roughened. The thickened portion of the muscles was removed and the bone curetted. Recovery was uneventful. The removed tissue was examined by Dr. W. M. L. Coplin, who stated that a definite diagnosis from such disconnected fragment of tissue might seem hazardous, but the findings strongly suggested the diagnosis of ossifying myositis.

Two Cases of Myositis Ossificans.—At the meeting of the Philadelphia Academy of Surgery held March 2, there were reported two cases of myositis ossificans that illustrated two classes of this rather rare pathological condition. The first, where bone has formed in the softer tissues, with or without history of injury and with or without connection with the bones of the skeleton or with osteophytes, was reported by Dr. W. W. Keen. The second class is where there is formation of new bone involving muscles and fibrous structures resulting directly from accident to bone or its periosteum. The case reported by Dr. Keen was that of a woman aged forty years, who, at the age of nine, discovered a slightly tender swelling over the left fibula. At the age of fourteen walking became painful and muscle contractures caused the foot to assume marked extension. Tenotomy two years later caused only temporary improvement. Operation in 1901 showed irregular thickening of the deep fascia with what appeared to be bony plates. These plates were continuous with the fibula and there were also a number of them in the overlying muscle. The bony plates were removed through an incision that extended from the upper part of the calf nearly to the heel. The tendo-achillis was lengthened, this allowing the foot to be placed at right angles with the leg. The report from the patient nearly 20 months after operation is that she has suffered no pain in the muscles since and that there is no evidence of recurrence. The removed tissue was examined by Dr. W. G. Spiller who reported the condition as one of myositis fibrosa passing into myositis ossificans.

The Pathology of Ossifying Myositis.—Dr. W. M. L. Coplin, who had reported the histological findings in the tissue removed by Dr. Taylor, spoke of the difficulty experienced by pathologists in making diagnosis from small fragments of tissue, as in the case under discussion. The tissue in question contained masses of marrow cells in a cellular matrix, altogether resembling the cell picture of myeloid sarcoma. The suspicion of myositis ossificans was first aroused by finding newly formed bone along the degenerating muscle bundles. Ossifying myositis has been classified as idiomatic or traumatic, and disseminated or local. Regarding the origin of the condition there is some question as to its inflammatory nature. It is held by some writers to be a dystrophy, thus belonging to the group of diseases including pseudohypertrophic muscular paralysis. This view, however, is not generally accepted. The fact that traumatism is frequently a cause, the presence of lymphoid infiltration and the formation of new fibrous tissue point to the inflammatory nature of the process. It has been thought that it might depend upon the presence of the congenital or acquired ectopia of osteogenetic tissue which is stimulated to growth by irritation; the view that the bony change originates in a congenital defect in the involved parts is an adaptation of this theory. Regarding the condition as one that is essentially inflammatory in nature places it in close relation to the ossifying inflammations of tendon sheaths and glands. Still another view is that myositis ossificans is essentially neoplastic in nature and thus comparable to cases of multiple osteomata in the lungs, glands, etc. The many suggestions offered prove that the origin of the change is yet unknown. That it is infectious in character has even been suggested. In a reported case of gonorrheal myositis and in a case of staphylococcus infection, similar but not identical changes have been recorded. It is not uncommon to find near tuberculous foci osteoid or chondroid or perhaps better, cretaceous areas that may resemble bone. In closing, Dr. Coplin emphasized the possible difficulty in differentiating ossifying myositis from myeloid sarcoma, especially in tissue from the region of the jaw. This difficulty is particularly marked when the specimen consists of only small fragments of tissue.

The Treatment of Exophthalmic Goitre.—Dr. John B. Deaver read a paper on the above subject and reported a case of bilateral removal of the entire cervical sympathetic, *i.e.*, cords and their ganglia. The patient was a young woman of twenty-four years, who had the cardinal symptoms of exophthalmic goiter. Ether was used as the anesthetic, the patient taking it badly from the start and its discontinuance being necessary several times during the operation. The cervical sympathetic of both sides from above the superior ganglion to below the inferior ganglion was removed. The patient did badly for several days owing to postoperative pneumonia, but finally made a good recovery. The exophthalmos had practically disappeared 24 hours after the operation. The nervous symptoms have also disappeared and the patient is improved in every way. Dr. Deaver believes sympathectomy to be the operation of choice in these cases as the mortality is lower and the cures, when attained, are more perfect. The operation should not be done during the periods of hyperexcitation. This operation is also indicated in certain cases of glaucoma and recurrent epilepsy. Dr. Spiller asked if the removed nerves showed any signs of disease. In one case that came under his notice the superior sympathetic ganglion was found to be considerably enlarged. In reply Dr. Deaver stated that the nerves were now being studied. They presented no gross appearance of disease.

The Drainage of the Chest in Empyema.—Dr. Leon Brinkman, by invitation, read a paper on the above subject before the Philadelphia Academy of Surgery, March 2. The paper was based on a study of 27 cases treated according to a method devised by Dr. Brinkman. The method is somewhat similar to that devised by Beck of New York some years ago, but differs from it in many respects. Dr. Brinkman's objections to older methods are that simple incision and drainage is only temporary in results and not curative, while resection of ribs followed by tubular drainage is unsatisfactory because the tube is a foreign body and causes continual irritation. There is also danger of the tube slipping into the wound. The technic followed by Dr. Brinkman consists of a vertical incision in the mid-axillary line and exposure of the fourth, fifth and sixth ribs, or more if necessary. A specially devised periosteal elevator is then used, the ribs are divided and the pleura exposed. An opening in the pleura is then made in the lower part of the wound and afterward extended upward. If the lung is found to be fixed the adhesions are separated or divided by a knife if necessary. The pleura is then stitched to the skin around the entire margin of the wound, the diaphragm being carefully avoided. Irrigation is not practised as it has a tendency to increase rather than diminish the discharge. Of 47 cases of empyema the first 20 were treated by excision of ribs and the insertion of tubular drainage, while the last 27, as reported, were treated by the method just described. The results in the latter series were very much more satisfactory, there being only two recurrences, both of these being in young females who also had involvment of the lung. The other 25 cases were cured in from three weeks to five months. In five cases the wound edges were afterward stitched and brought together to aid closure. In 21 of the 27 cases chloroform was the anesthetic employed, ether being used in only six. Chloroform is especially indicated in children. If the effusion is large, aspiration should be practised several hours before operation. In making exploratory aspiration, plugging of the syringe may be avoided by filling the instrument half full of saline solution before it is inserted.

In discussing Dr. Brinkman's paper, Dr. Richard H. Harte said that chloroform was generally regarded as the best anesthetic for cases of empyema. He generally uses ether because of some bad experience with chloroform. He would not hestitate to use the latter anesthetic in cases of children. He emphasized the importance of operating rapidly in cases of empyema, the important element here, as in typhoid perforation, being time. After exposure of the ribs, they are divided by forceps with handles six inches longer than ordinary, the increased leverage thus secured aiding in time. A double tube for drainage should be employed and one can hardly get too large a size. The tube should be either very long or very short, as one that just reaches to the lung will cause irritation. A very long one is preferable as it bends over and the end is not in contact with the lung. In cases treated by this method the wound will heal when there is no more pus and this is as early as healing is desired.

CHICAGO.

Report of State Board of Charities.—The seventeenth biennial report of the State Board of Charities was issued a few days ago. The report shows that the average number of inmates of all the institutions under the Board's jurisdiction in 1900 and 1901 was 10,040. In 1901 and 1902 it was 10,448, and for the two years it averaged 10,244. The per capita cost for 1900 and 1901 was $164.09. For 1901 and 1902, the per capita cost was $167.82. For the two years, from July 1, 1900, to June 30, 1902, the per capita was $165.95 per annum.

Almhouses and Jails.—Upon this subject the report says: "It is a pleasure to report that the general condition of the almshouses and jails in this State is improving, although very unsatisfactory conditions exist in many of the Southern counties. The chief matters calling for criticism in certain institutions are neglect and lack of care, old and insanitary buildings, insufficient heating, lack of ventilation, bad plumbing, or none at all, lack of bathing facilities, impure and insufficient supply of water, and inadequate fire protection. Lack of adequate provision and proper help to care for the insane is also a general complaint made by the inspectors." The report gives a detailed description of every almshouse and jail in the State, all of which were inspected by the auxiliary county boards and representatives of the State Board. At the date of inspection, which was June 30, 1902, the total number of inmates in the almshouses was 6,830. Of this number, 2,986 were insane, 334 idiotic or feeble-minded, 54 deaf-mutes, 154 blind, 365 epileptics, 158 children under sixteen years old, and 2,779 not classified, the majority of whom are old and decrepit. The report shows that there were 123 insane under restraint, and 124 locked in rooms in the different almshouses. The report also shows that there were 1,284 prisoners in the county jails. Of this number, 749 were awaiting trial, 383 were serving sentences, 28 awaiting transfer to the penitentiary, 19 awaiting transfer to the State Reformatory, 6 debtors, 80 city prisoners, and 19 insane awaiting admission to hospitals.

Syphilis as a Cause of Chorea.—A paper with this title was read by Dr. L. Harrison Mettler before the Chicago Medical Society, and reported the following case, which he had seen in consultation with Dr. S. L. McCreight: H. P., male, eleven years of age, born at full term, of German parentage, and showing at present unmistakable signs of inherited syphilis. The father, forty years of age, married about fourteen years, confessed to his wife and former physicians that he had contracted syphilis about nine or ten years prior to his marriage. He has had several hemiplegic strokes, has been in the insane asylum, and is now at home, a sad picture of irresponsible, harmless dementia, with paresis. The mother is without any signs of syphilitic taint, and denies having had any miscarriages. There are four living children, aged twelve, eleven, nine and five years respectively, all showing more or less signs of inherited syphilis, such as ozena, skin eruptions, sore throat, diarrhea, Hutchinson's teeth, etc. The patient, who is the second child, appeared to be healthy until he was two years of age, when, without warning, he was taken with five severe convulsive seizures, one following the other in rapid succession, and all occurring within the space of a few hours. The mother supposed that these were attacks of simple infantile eclampsia, and so failed to note details as to the manner of their origin, continuation and termination. It was during these seizures that the boy's "eyes went wrong," as she expressed it, and left him with his present internal strabismus. Diplopia was present for a time, but now the vision of one eye is almost negative. The examination of the fundi a year or so ago by Dr. McCreight discovered nothing very abnormal. The shape of the head and development of the body show a well-marked condition of degeneracy. About three years ago the mother thought he had an attack of rheumatism, with heart failure. At present, however, there are no signs of organic heart disease. Scarlet fever and measles are to be added to the history. After the convulsions at two years of age, the left side became notably weaker and thinner. There has never been any repetition of the convulsions. At seven years of age the boy suffered his first attack of chorea. It seemed to be slightly more pronounced upon the left than upon the right side. The attack was, however, of the generalized form. Four attacks have occurred altogether, about a year apart, and each more severe than the previous one. Except the last one, they continued only a few weeks, and then gradually disappeared. This intermittence was almost, but not absolutely, complete; in the intervals there were occasional slight choreiform manifestations. The movements during the height of the trouble were all irregular, spasmodic, and incoordinated. They were typically choreic, and not slow or rhythmical, as in the so-called "symptomatic" chorea.

After discussing the nature of chorea, its possible dependence upon syphilis, acquired or inherited, and after showing how inadequately it is referred to by the writers in the books and current literature, the author formulated the following conclusions: (1) Syphilis, in rare instances, is a cause of chorea and should always be thought of as a possibility in the examination of every case. (2) Chorea may be the result of acquired or inherited syphilis. (3) Most of the cases of syphilitic chorea are unilateral, belong to the so-called symptomatic, pre- or posthemiplegic type of the disease; may or may not be associated with other signs of an irritative lesion; are not infrequently developed in hereditary syphilitics, and are to be attributed probably to a functional disturbance of an irritative sort in the cortical or ganglionic motor cells. (4) The existence and recognition of the two forms of syphilitic chorea, namely, the focal and the generalized, supports the inference that all forms of chorea are but the expression of any one or more of a multiplicity of possible etiological factors, which may disturb the functional activity of the upper motor neurones, these factors being all the way from a gross lesion down to a molecular or chemical change not demonstrable with our present means of investigation. These conclusions lead to the corollary that chorea is not a disease, but merely a symptom. (5) When syphilis is decided upon as the cause of a case of chorea, that case should cease to be regarded as chorea, and should be promptly and thoroughly treated as syphilis.

The Tuning-Fork and Stethoscope in the Diagnosis of Fractures.—This paper was read by Dr. Albert H. Andrews. The test for fractures is based upon the fact that bone is an excellent conductor of sound waves, while the soft tissues of the body conduct sound waves very poorly. The test for fractures, especially of long bones, is made by placing the stethoscope in close proximity to the bone near one end, and the handle of a vibrating tuning-fork as close to the bone as possible beyond the supposed seat of fracture. The sound will be transmitted through the shaft of the bone to the stethoscope and through the stethoscope to the ears of the examiner. When the bone is intact, if the test is properly made, the sound of the fork will be heard with great distinctness, but if there is a solution of continuity the sound will either not be heard at all or will be heard very faintly. By comparing the intensity of the sound on the suspected side with the sound heard under similar conditions on the normal side, the question of continuity of bone can be determined.

GENERAL.

Typhoid in Ithaca.—Up to and including the end of week of March 10, there have been 755 cases of typhoid in Ithaca since January 10, of which clinical history has been obtained. The number of unreported cases is unknown, but probably very high. It seems probable that at least 1,000 cases have developed, and the end is not yet in sight. The latest information obtainable would seem to show that the Ithaca water-supply has been infected for over a year, and that the present outbreak is simply a recrudescence of last year's milder epidemic.

Leprosy in Russia.—The Society for the Suppression of Leprosy has recently erected a sanatorium for lepers in St. Petersburg, accommodating 95 patients.

The Dean of Physicians.—Dr. David, of Montpellier, France, celebrated his one hundred and second birthday on February 8, 1903. Born in 1801, he practised his profession till he reached his 98th year. The doctor attributes his longevity and the good health which he still enjoys, to sobriety and an open air life.

Esmarch's Jubilee at Kiel.—The German medical world has recently celebrated the eightieth birthday of Esmarch. A committee comprising Prince Henry of Prussia, Prince Ferdinand of Bavaria, the oculist Duke Charles Theodor of Bavaria, Prof. Gussenbauer and many others eminent in the medical profession, are formulating plans for the erection of a monument to Esmarch in Faenning, his native city.

A Physician Three Times President of a Republic.—Dr. Deucher has, for the third time, been elected President of the Helvetian Confederation. He was elected for the first time in 1886.

Syphilis in Italy.—According to the statistics published by Prof. C. Ruata, 2,000 deaths from syphilis occur yearly in Italy. If to this be added deaths from diseases caused by syphilis, it is calculated that the number directly or indirectly due to that disease reaches in the neighborhood of 30,000 yearly.

Plague Is Spreading.—According to the daily press the Post Office Department has received a telegram from the postmaster at Ensenada, Lower California, near the United States border, that one case of the plague is reported there. It is believed that the disease was brought from San Francisco. A servant employed by Dr. Moya at Villa Union, who was supposed to have the plague, plunged into the river to escape the Health Officers, and was immediately seized by an alligator and dragged beneath the water. This was the last seen of him. Three dead bodies were found in a house on the Cerritos ranch near Mazatlan. It is supposed that their death was due to the plague. The cases are under investigation.

The "Boston Medical and Surgical Journal's" Seventy-fifth Anniversary.—The first issue of the *Boston Medical and Surgical Journal* as a weekly journal under that title appeared Feb. 19, 1828; with this year and the issue of Feb. 19th last, therefore, the *Journal* celebrates its seventy-fifth anniversary even to the day of the month. From February, 1828, to February, 1903, there has been a continuous weekly issue of the *Journal* without intermission. Through all the changes and chances of medical journalism during that long period,—and these have been both numerous and serious,—the *Journal* has held its own and kept on its way. The London *Lancet* is probably the only other weekly medical journal now in existence with anything approaching such an unbroken record.

Programme of Tours of the International Medical Congress.—The Fourteenth International Medical Congress will be held this year in Madrid, from April 23 to 30, and as usual a number of physicians, accompanied by their families, are planning to attend the meeting. It is therefore thought that it would be of advantage to arrange a number of conducted tours from this country to and from Madrid, as in this way better accommodations can be obtained at reduced prices, besides which, those participating can choose the routes which will enable them to visit the different parts of the Continent that they are desirous of seeing. For this reason four routes have been planned, one with the idea of accommodating those who feel the necessity of making a quick trip to and from the Congress, and others that are more extended and will allow time for sightseeing in the various countries through which they pass. An additional advantage will be obtained in this way, as a traveling conductor who is thoroughly conversant with the languages and customs of the countries visited, will accompany the different parties through the parts of the trip that are comparatively unfrequented routes of travel. The tours are as follows: Tour 1.—Including one week in Madrid during the Congress, with visits to Ronda, Seville, Cordova, Granada, etc., leaving New York by North German Lloyd twin-screw steamship Prinzess Irene, on Saturday, April 11, 1903, due to arrive Gibraltar, April 20; spend the morning in Gibraltar visiting the fortifications, Rock Galleries, etc. Leave by afternoon service by ferry to Algeciras, thence by rail to Ronda, where the night will be spent. Tuesday, April 21, Ronda; leave by morning train via Bobadilla for Seville, arriving 6 P. M. Wednesday, April 22, to be spent in Seville. Carriages will be provided for visiting the Cathedral. The Alcazar, or house of Cesar, the residence of the Moorish and Catholic kings. Leave by night express for Madrid. (Sleeping car berths can be secured through the conductor of the tour; the expense is not included in the fare.) Thursday, April 23, arrive Madrid 10:10 A. M., the day to be spent in Madrid. Thursday, April 30, leave Madrid by night express train for Cordova. Arrive Cordova 6:54 A. M. Spend the morning in visiting the Cathedral. Leave at noon via Bobadilla for Granada, arriving there the same evening. Saturday, May 2, to be spent in Granada. Sunday, May 3, leave Granada by morning train for Algeciras and Gibraltar. Monday, May 4, embark on North German Lloyd steamer Prinzess Irene for New York. Wednesday, May 13, due to arrive New York.

Tours 2, 3 and 4 are extensions of this; full details of which can be had by applying to Cook's, Broadway and Warren St., New York.

CORRESPONDENCE.

OUR VIENNA LETTER.

(From Our Special Correspondent.)

WIEN (Austria), February 14, 1903.

AMERICAN STUDENTS PHOTOGRAPHED—THE PASSING OF CLINICIANS—PROF. POLITZER'S SUCCESSOR—DR. JULIUS MAUTHNER PROMOTED—WHO WILL FILL THE CHAIR OF PROF. NEUMANN?—NO DEARTH IN PROFESSORS—DR. WILHELM TÜRK ON HEMATOLOGY.

DURING the past week the colony of American students in Vienna sat for a photograph in the big "Erste Hof" of the Krankenhaus. The number of those present amounted to a little less than seventy, a number which represents about three-quarters of all the Americans pursuing medical courses here. Considerable as is this contribution to the post-graduate corps of the school, the older habitués assert that it denotes a distinct falling off from previous years. The tide seems to be turning toward Berlin—nor is the cause very far to seek. Time has done much to rob the Faculty of its ancient prestige, and an unfortunate system of regulating its affairs is doing still more.

That great galaxy of clinicians which adorned the Krankenhaus within the last twenty years of the preceding century—the Bambergers, Chvosteks, Alberts, Kaposis, has almost passed over beyond the horizon; only recently Krafft-Ebing, the psychiater, added another to the long list of these unreplaceable dead. But this is not all. Prof. Politzer, perhaps the greatest of living otologists and in the full bloom of his knowledge—witness the fact that he only lately produced a new edition of his text-book, and that he is at present engaged upon a history of medicine—and Prof. Isidor Neumann, the last of the school founded by Hebra, are to be retired as emeritus during the coming year, owing to the purely accidental fact that they have arrived at the biblical allotment of three score years and ten. One would think that the recent deaths of two such veterans as Virchow and v. Kupffer might have afforded sufficient evidence that the brain-cells are occasionally refractory to such iron-bound, or rather rust-bound, theories.

It is rumored that Prof. Urbantschitch, at present chief of the otological service in the Allgemeine Poliklinik, will succeed Prof. Politzer; there is, perhaps, some justification for this belief in the fact that only last week he was promoted from the position of "extraordinary" to that of "ordinary" professor. The same honor was accorded to Dr. Julius Mauthner, Professor of Chemistry. Who is to fill the chair of Prof. Neumann, the dean of syphilography in Europe ever since the death of Fournier of Paris, no one presumes to guess. Perhaps it will be one of the first assistants whom he has educated within his wards during the long tenure of his chair, and of whom everyone without exception has since become a professor; even Dr. Matzenau, the youngest of the family, who only just left the hospital, has already been called to take Rille's place in Innsbruck! Perhaps it will be Dr. Finger, at present in the Wiedener Spital, and a well-known authority on venereal disease.

Notwithstanding this terrible depletion, however, there is a supply which continues to fulfill the demand for good men as soon as it makes itself felt, and that too without wandering very far from the portals of the Krankenhaus itself. For example, the second medical clinic, which dates its fame from the incumbency of Skoda, has ever since been presided over by a succession of its own disciples, surely not the least of whom is Prof. Neusser, who at present holds the chair. And just yesterday (Feb. 13) the Probe-Vorlesung of his first assistant, Dr. Wilhelm Türk, for the title of "Docent," afforded fresh promise that the torch will be passed on to future years in something of the great old style. Dr. Türk, who has devoted most of his attention in past years to the study of diseases of the blood, and who so ably combated the sporozoic theory of the origin of leucemia, as advanced by Löwit in the last Congress, naturally lectured upon a branch allied to hematology, namely the lymphomatoses. His lecture was a summary of his individual views, and as these have never before been published in such succinct form, it may not be amiss to give the substance of the Vorlesung. He states that the lymphomatoses, or lymph-gland hypertrophies, may be divided into two great classes, namely those characterized by a slow and benign course of growth on the part of the lymph glands, and those characterized by a malign form of growth. The former are equivalent to the lymphadenomatous, the latter to the lymphosarcomatous types of the pathologist. Between these two types might be placed a third group with intermediate characters, acute growth without local malignancy, in the sense of the pathologist. The hematological picture given by the disease is apparently independent of the nature of the glandular growth; it is simply determined by the degree and the rapidity with which the proliferated elements are washed out into the blood. Thus in the chronic and acute benign groups of the current disease, there are forms characterized by the complete lack of such a washing out ("Ausschwemmung") by a moderate degree, and by an excessive degree of it, these grades are characterized as the alymphemic. Dr. Türk stated that all three forms of these two groups had been exemplified in his clinical experience. The generally accepted designation of the alymphemic form of the lymphadenomatous group is "Pseudoleucemia"; that of the sublymphemic and the lymphemic forms of the same group is lymphatic leucemia." Clinically these two diseases may be differentiated, but essentially there exists no other distinction between them than that in the former the lymphatic elements are not washed into the blood, whereas in the latter they are. But not only do there exist all intermediate stages, comprehended by the term "sublymphic," but pseudoleucemias may gradually, or acutely and sub finem, develop into leucemias, while on the other hand, the latter may undergo almost a complete hematological revolution of the contrary character. Even in typical alymphic pseudoleucemias, however, a careful examination of the blood always gives some evidence of the diseased function of the lymph glands, *e.g.*, the presence of isolated large mononuclear lymphocytes. As regards the third, or lymphosarcomatous, group of the lymphomatoses, they may be divided into the lymphosarcomata and the chloromata.

The hematological picture, it will be seen, does not in any instance give a clue to the real pathological condition; it only represents the degree of "Ausschwemmung." Moreover, it is well to emphasize the fact that both pathologically and hematologically, one form may pass into another: the benign forms may become malignant, and so forth.

The lecture was attended by members of almost every faculty of the medical college, and was greeted by great applause.

SELF-ACCUSATION AND INSANITY.

To the Editor of the MEDICAL NEWS:

DEAR SIR: Is the man or woman who goes to a police station to confess being the author of a crime, which at the time is holding the public attention, insane or only hysterical? The psychology of self-accusation leads us to the conclusion that auto-accusers are insane. The hysterical accuses *others* but rarely, if ever, him or herself.

In self-accusation the process by which the degenerate arrives at the conclusion that he is the criminal is that of suggestion. First, we have the contemplation of the enormity of the offence against all law and order, then follows the punishment that is to expiate the crime, and it is at this point that mental breakdown commences.

Just as in looking over the side of a high cliff the strongest of us may become confused and dizzy, so the mentally unsound, in contemplating the pain the criminal will suffer on the scaffold, becomes panic-stricken and the terrible thought suggests itself: "Suppose I did it." The suggestion in time becomes an obsession and torments the patient until either self-accusation or suicide brings him relief or, in despair, repetition in *fact* of his imaginary crime.

It is here I wish to dwell for a moment. Insane acts are committed regardless of consequences. Whether the result be the theft of a loaf of bread, or the murder of a family in their sleep, the prompting is the same. A man who stationed himself on a housetop and cast heavy granite blocks down upon the thoroughfare below would not be allowed to continue his occupation until some disaster resulted. So, too, in the auto-accuser, essentially insane, suggestion is potential murder. Shall we laugh at these men and dismiss them contemptuously as "cranks" or put them under restraint? A "crank" with "suggestions" that one day make him play the clown and the next day, as likely as not, attempt or commit murder, is not a safe member of the community. J. R. CLEMENS.

St. Louis, Mo.

SOCIETY PROCEEDINGS.

THE PHYSICIANS' CLUB OF CHICAGO.

Regular Meeting, held February 23, 1903.

Henry B. Favill, M.D., in the Chair.

The Reasons for a Special Effort to Prevent the Spread of Tuberculosis.—There are three reasons, said Dr. William A. Evans, to be comprehended under this title. Discussing the first of these reasons, he said that tuberculosis still remains the chief source of death and the subject of prime consideration. In Philadelphia, during the census year of 1900, tuberculosis was responsible for 11.5 per cent. of the total death rate; in New York State for 10.6 to 11 per cent.; in Greater New York, for 7,919 deaths; in Chicago, for 2,700 deaths, or 9.5 per cent of the total death rate; in San Francisco, 1,049 deaths, or 16 per cent. of the total death rate. In the ten principal cities of this country, tuberculosis is responsible for 18,763 deaths, or 10.8 per cent. of the total death rate each year. Compared with other infectious diseases which receive greater attention in the matter of prevention than tuberculosis, the relation in Chicago to diphtheria is 4 to 1; scarlet fever, 7 to 1; typhoid fever 7 to 1. Consumption kills in Chicago each year one and two-thirds times as many people as diphtheria, scarlet fever, typhoid, smallpox, measles, and meningitis combined. A comparison of the death rate from these diseases in the ten principal cities of this country shows that 18.763 die of tuberculosis; and 12,261 die of typhoid, scarlet fever, diphtheria, measles and whooping-cough combined.

Another point worthy of consideration is the approximate money cost of tuberculosis. Although pneumonia is a frequent disease, yet the patient is sick for only a short time, and is a relatively small tax on the community. The subject of tuberculosis, on the other hand, is sick on an average of from one and a half to three years, and during much of this time is a heavy tax on the community. According to Vaughan's estimate, there are one and a quarter million tuberculous subjects in this country. At $1.16 cost to the community, which is not a high figure, the annual cost of tuberculosis is $700,000,000. Biggs, of New York, estimates that the cost in this country is $350,000,000. Prior to the spurt in industrial activty, the total money paid during the last five years for exports was only $800,000,000.

The speaker called attention to the inaccuracy of comparative statements that are published now and then, in which comparison is made between the death rate of to-day and that of forty or fifty years ago. The diagnosis during those decades was not accurate, and therefore a comparison is of no value. The statistics of 1880 show that there is a slight decrease in the death rate from tuberculosis, but there is a decrease also in the death rate from every other disease, with the exception of pneumonia. The decrease in the death rate from tuberculosis is not commensurate with the decrease in the death rate from other diseases, that is, infectious diseases. Looking at it from this standpoint, there is a relative increase in the death rate from tuberculosis, and it becomes a question of growing rather than declining importance.

Can tuberculosis be cured? According to the statistics compiled by Dr. Appel, U. S. A., in charge of Fort Bayard Sanitarium, 7.4 per cent. of cases are clinically cured; 11.6 convalescent; 34.9 improved; 25.2 unimproved; 20.9 per cent. die. The United States Army Hospital is required to take tuberculosis in all stages, and a considerable number of cases that figure in these statistics are people who die before they have been in the institution one month. Again, these people in many instances are syphilitics, and, in most instances, alcoholics, which would, of course, influence the statistics. By the term clinically cured is meant those cases that no longer have fever; cough; no bacilli in the sputum, and that no longer react to tuberculin. The statistics of the Government Hospital at Fort Stanton, in charge of Dr. Carrington, show that 24 per cent. are apparently cured; 53 per cent. improved; and that 23 per cent. die. Of course in the early stage, 66.6 per cent. are apparently cured; 30 per cent. improved, and 3.3 per cent. die. In the second and third stages, 13 per cent. are apparently cured; 51 per cent. improved; 3 per cent. unimproved, and 26 per cent die. Latham, in a study of the statistics of 44 sanatoria, found that the average of cures is 30.6 per cent., and the average of improved cases 71.4 per cent. From a study of the statistics of the German Insurance Office, embracing twenty thousand cases, it is seen that 70 to 80 per cent. are apparently cured, and 40 to 45 per cent. permanently cured at the end of three years.

As further evidence bearing on this question, Dr. Evans cited autopsial statistics. He did not agree with the statistics of Bouchard and Ribbert, who claim that healed lesions are found in from 75 to 100 per cent. of the people dying from diseases other than tuberculosis. Nor does he agree with Massini and Bollinger, whose figures range from 27 to 39 per cent. The truth lies somewhere between Hertler, who gives 4.7 per cent., and Latham, who gives 22 per cent. Osler says 7.5 per cent., as the result of one thousand post-mortems. Wethered gives 10 per cent. Knopf agrees with Latham.

In conclusion, Dr. Evans called attention to the work of Behring, who is attempting to produce artificial immunization in animals.

In What Way Can the General Practitioner Assist in the Purposes of the Crusade?—This was considered by Dr. N. S. Davis, Jr. The position of the general practitioner in this movement is educative, but his influence should not be limited to educating his patient only. The hygienic treatment of tuberculosis is the only treatment that holds out any hope of permanent recovery. It is essential that we educate those about the patient, those who must be associated with him. The patient should live in light rooms, where there is good ventilation, and where the surroundings are clean and hygienic. It is impossible to maintain cleanliness in a dark place. Therefore, these patients should never be permitted to occupy dark rooms that are poorly ventilated; that receive no sunlight or even daylight. We must teach our patients and their friends that the rooms must be thoroughly ventilated; that they must not be afraid of draughts; that there must be fresh air. It is better to stand the risks of exposure to draughts, which are small, than to constantly respire foul air. Patients and their friends should be taught to collect and destroy the sputum. This should not be overlooked at any time. There is one point that is oftentimes overlooked by the practitioner, namely, that patients can be taught to suppress a cough. When coughing is accompanied by expectoration, it should be promoted, and not suppressed, but much coughing is done not for the purpose of expelling something from the air passages, but to relieve a tickling in the throat. Such a cough can and should be suppressed. The little spray thrown out by the effort at coughing contaminates the air and walls of the room, and may be the source of infection. These rules are of benefit to the patient, but particularly so to those who come in contact with him, by preventing contamination. The importance of following these rules can be made more apparent by telling the patient that he is liable to reinfect his own lungs in new places by constant reinhalation of bacilli from the air.

He believes that the statistics read by Dr. Evans would be changed materially if our nurses were educated to take care of tuberculous patients as they are to take care of typhoid fever and pneumonia cases. This is one of the most important points to be considered in the matter of prevention of tuberculosis. The physician rarely comes in contact with a patient's friends and relatives, whereas the nurse comes in contact with both all the time. She can point out the advantages as the physician cannot. Just as soon as this knowledge can be disseminated throughout the community, the community will perceive the necessity for observing hygienic rules. They will appreciate the necessity of thorough ventilation in the street-car, public conveyances of all kinds, theaters, churches, downtown stores, etc. These are points the public does not appreciate thoroughly, nor can the laity be made to do so until educated much more perfectly than at present.

Committee on the Prevention of Tuberculosis of the Visiting Nurses' Association, Chicago.—This paper was read by Dr. Arnold C. Klebs. The outline of the work as proved by the Committee is as follows:

Considering the fact that the family members of a consumptive and those living in unhealthy conditions are the ones most threatened by the disease, education on the subject and eventually proper material aid have to be furnished to them primarily. The distribution of instructive pamphlets alone usually proves insufficient. It is therefore necessary to enhance the value of such printed instructions by personal interviews and repeated visits. For this purpose the cooperation of specially trained physicians and nurses, with the assistance of charity organizations, is deemed of importance. To facilitate such cooperation and to insure the uniformity of the measures to be employed, it is planned to establish a central office. From this office the general work is to be directed and carried out in district offices in the different parts of the city.

(1) The work in the central office is to be done by an executive committee of six, to be elected from the (2) general committee of forty, of which twelve are to be physicians. (3) A special tuberculosis fund may be established, if necessary. (4) Work to be done in the central office: To collect and file all information regarding tuberculosis in Chicago. To ascertain the causes for the greater prevalence of the disease in certain districts. Examine the conditions of life of the people in those districts, and especially the condition of dwellings. To start a collection of literature on tuberculosis, especially in its socio-economic aspect. To

maintain correspondence with other organizations with similar purposes. To prepare instructive reading matter on the subject for distribution among the public, especially on (1) how to avoid contracting tuberculosis. (2) Predisposing causes of tuberculosis, and how to avoid or overcome them. (3) Letter to store-keepers and manufacturers, telling them how they can best help the cause. (4) Letter to hotel-keepers on the same. (5) Letter to school-teachers and superintendents on the same. (6) Instruction to nurses as to how to proceed in cases of tuberculosis in the different stages, what to do for the other members of the family, etc. (7) Instructions to district physicians: (*a*) Which cases to treat, and how; (*b*) which cases to report to central office; (*c*) what details as regard hygiene and sanitation are to be investigated in a consumptive's family. (8) For district physicians: Classification of tuberculous cases according to the physical findings: (*a*) Extent of disease; (*b*) degree of virulency; (*c*) duration of disease, and (*d*) prognosis. (9) A popular treatise on the subject of tuberculosis, explaining the exact degree of the danger of contagion and emphasizing the importance of predisposing factors. Also an outline of the measures inaugurated in Chicago. To make arrangements for public lectures on topics of tuberculosis and public and individual hygiene in all parts of the city. Also to induce the press to give publicity to such topics. To cooperate with the health authorities and charity organizations in the enforcement of measures which will promote public hygiene. To see to the disinfection of houses in which consumptives have died, and to ascertain the most efficient and practical method, which will accomplish this. To procure information about healthful occupations for the employment of persons working under unhygienic conditions, eventually furnishing them such positions. To decide on the advisability of transferring persons attacked with or predisposed to the disease to other climates, eventually providing them with positions abroad. To plan, found and eventually maintain health farms for convalescing or predisposed children, sanatoria for curable cases, and hospitals or homes for advanced cases. To advance the introduction of modern methods in existing institutions, receiving consumptives. To test new ideas in the treatment of the disease which promise results. To supply the needy with food, medicines, disinfectants, spit-cups, and articles which will promote conditions of hygiene and cleanliness in their homes. To extend aid to all efforts at organizations for the prevention of tuberculosis, and to stimulate activity in this direction everywhere. To examine all cases applying for help and treatment at the office or in their homes, and to decide upon the most efficient procedure in such cases for their own as well as for the benefit of their families. To facilitate and increase the radius of such work by the foundation of district offices, wherever they may be needed. Each office to have one or more physicians and nurses in charge, which will carry on the work as outlined by the central office.

General Discussion.—Dr. Robert H. Babcock stated that whenever tuberculosis has been diminished, it has been through the intelligent efforts of the medical profession, and especially by bringing to bear the influence of public health boards. The first step in the educational movement regarding tuberculosis should be the education of the medical profession. Many physicians are entirely oblivious to the necessity of preserving proper hygienic measures in cases of tuberculosis. They should educate the patient and the attendants. The medical profession should endeavor to secure proper legislation along the lines of prevention and treatment of the disease. If this work is to be carried on successfully, it must not be done by a handful of devoted men, but the local and State health boards should be given powers which will enable them to combat successfully this disease. The local board of health is more or less hindered in its ability to cope adequately with this disease. It has not the power to carry out measures of disinfection, to say nothing about registration of these cases. This power must come through the State legislature. This body must be shown the necessity for establishing public sanatoria and hospitals throughout the State for the care of consumptives.

Dr. Walter M. Fitch directed attention to the susceptibility to infection. The entire bronchial tract is lined with ciliated epithelium, which is constantly vibrating and throwing out foreign material from the air passages. When the lungs are fully expanded, these cilia operate perfectly, sweeping clean the mucous membrane from any disease germs which may lodge upon it. If, on the other hand, there is partial collapse of these bronchial tubes due to imperfect expansion, pockets are formed into which the germs are drawn and where they remain. The cilia cannot remove them. Many individuals are growing up with a subnormal development of the chest. Obstructions to respiration in the form of adenoids and enlarged turbinals are overlooked in childhood; children grow up with a contracted chest, the result of subnormal respiration. They are susceptible to lung infections. A well-developed chest is not susceptible to such infection, and much can be done to overcome this susceptibility to the disease.

Dr. George W. Webster considered two factors: (1) the germ; (2) the susceptibility of the individual. As it is impossible to destroy all the tubercle bacilli, it is necessary to take every precaution toward prevention of the disease. The form of chest and the type of tissue in which the disease is prone to develop do not receive sufficient recognition. In some families individuals with special predisposition to tuberculosis in the way of deficient expansion of the chest are found, and these individuals should be impressed with the necessity for proper hygienic training. They should be informed of the predisposing factors to tuberculosis, and urged to live in hygienic surroundings, take proper exercise, to observe cleanliness, temperance, and to aerate the lungs perfectly. The importance of institutional treatment should be dwelt upon. Institutional treatment is of value chiefly because it teaches these patients their duty to themselves, their duty to their family and to the public. Institutional treatment is of value because it removes these persons from their home surroundings, and in that way removes a focus of infection. He emphasized the importance of proper legislation, which is essential to carrying out proper methods of prevention. He urged upon the profession the necessity for taking steps to defeat a bill now pending in the legislature, whose purpose it is to repeal the so-called "birth and death bill." This birth and death bill is the first great step in medical legislation taken by the State of Illinois. Furthermore, steps should be taken to promote the establishment of a State sanatorium for consumptives. Every physician should do all he can in this direction. It is a duty he owes to himself, his patients, and the public at large. He considered the plan proposed by Dr. Klebs as eminently practical and sufficiently elaborate to meet all the requirements of the case. In conclusion, he offered the following resolution:

"Resolved, That it is the sense of the Physicians' Club that its members heartily approve and endorse the plan proposed by Dr. Klebs for preventing the spread of pulmonary tuberculosis." Carried.

Dr. L. Harrison Mettler called attention to the fact that even the more intelligent of the laity do not consider tuberculosis as a contagious disease in the sense as is scarlet fever. He suggested that properly guarded articles be given to the public press, journals and magazines for the purpose of educating the public. The public can be reached better through a daily paper than through any other medium. He endorsed the plan proposed by Dr. Klebs of giving public lectures on the prevention of tuberculosis. These lectures would convey information directly to the people, who should be impressed with the fact that tuberculosis is communicable, although not in the sense that scarlet fever is.

Dr. A. M. Corwin stated that the element of depressed tissue resistance did not receive sufficient recognition in the matter of susceptibility to tuberculosis. He referred to the poor architecture, from the standpoint of hygiene, of the modern building. The atmosphere in most of them is foul, because of insufficient ventilation and poor lighting facilities. He suggested that it would be interesting to ascertain what proportion of cases of tuberculosis come from the class of people who spend much time in these buildings, particularly the poorly vitalized class. The dust-laden atmosphere in these buildings produces a primary inflammation of the pulmonary tissue, thus affording a suitable medium for the lodgment and growth of the tubercle bacillus. This matter is of equal importance with the proper hygiene of the home and hospital.

Dr. Arnold C. Klebs said that he believes the public would resent any intrusion by public health officers in a disease which affects the victims rather slightly. Legislation would probably necessitate such an intrusion, and give rise to conflicts of authority. That is one reason, probably, why the health boards have been unable to do more than they have in the prevention of this disease. It is also the reason why the registration of tuberculous cases is objected to, and although this would be an ideal measure, yet it cannot be carried out. Another thing that should be done is thorough disinfection of the dwelling occupied by a deceased tuberculous patient. This would be a great factor in prevention.

Dr. John A. Robison said that physicians should criticize any shortcomings of the City or State governments in carrying out proper hygienic measures. Much can be done if pressure is brought to bear on the city officials, so that they would give the local board of health more power to carry out proper sanitary measures, not only with regard to the prevention of tuberculosis, but also the prevention of other infectious diseases. He commented favorably upon the work done by the committee appointed by the Chicago Medical Society to investigate the conduct and management of the Hospital for Consumptives at Dunning.

BOOK REVIEWS.

DISEASES OF THE PANCREAS, AND THEIR SURGICAL TREATMENT. By A. W. MAYO ROBSON, F.R.C.S., Senior Surgeon, Leeds General Infirmary; Emeritus Professor of Surgery, Yorkshire College, Victoria University, etc., and B. G. A. MOYNIHAN, M.S. (Lond.), F.R.C.S., Assistant Surgeon, Leeds General Infirmary; Consulting Surgeon to the Skipton Hospital and to the Mirfield Memorial Hospital, etc. W. B. Saunders & Co., New York, Philadelphia and London.

AN especial interest attaches to the present volume, since it is a pioneer in a new field. The pancreas and its diseases have formed a topic which up to recent years has been dismissed with the briefest possible mention, even in medical works, while it has found no place whatever in the literature of surgery. The work of Fitz, Körte and Oser, however, and especially the recent researches of Opie, have made an excellent beginning and numerous recent observations have done much to elucidate the pathology of the gland from the standpoints of diagnosis and treatment. A sufficient number of well-authenticated cases has also been reported to indicate the importance of the subject and consequently the interest of the profession has been aroused to a degree which makes the appearance of the present work particularly timely.

Notwithstanding that the outlines of the subject have been given more or less distinctness by the work already done, still there is a great deal of vagueness and haziness as to detail attaching to it, so that at the present state of knowledge such a contribution as this can be presented only in a more or less tentative form. Such is the point of view of the authors whose preface avers that their book is intended mainly to record and review the work done in the past and to indicate, so far as is possible, the scope and trend of future research.

Considered in this way, the book leaves nothing to be desired and covers the ground remarkably well. The two initial chapters treat of the anatomy and development of the organ together with the methods of gaining access to it for the purpose of operation and of the experimental work that has been done, as well of pancreatic diabetes in man. The following sections then consider injuries of the pancreas; pancreatitis, acute, subacute and chronic; pancreatic calculus; pancreatic cysts and new growths of the pancreas. Many illustrative cases are given for each disease and a number of half-tones of gross and microscopic pathology have been added.

THE PROCEEDINGS OF THE CHARAKA CLUB. Vol. I. William Wood & Co. $3.50. Limited Edition.

ALL physicians who find recreation in indulging their taste for literature and history will find themselves stimulated by the contents of the Proceedings of the Charaka Club. It is a collection of papers read by a few of the busiest men of New York who, nevertheless, find time to interest themselves in medical history and artistic and literary subjects connected with their profession. Their Club, whose name was chosen in honor of the Hindoo Sage Charaka, has met monthly for two years and has published a selection of the papers read at the meetings. These contain valuable historic material and are illustrated with beautiful reproductions. For instance, with the paper by Charles L. Dana, on the Cult of Æsculapius, are published fifteen half-tones of the various celebrated statues and busts of the god that are known to have been discovered and preserved in museums, also a picture of the restoration of the ruins of the temple of Æsculapius at Epidauros, which dates to probably 500 years before Christ. This latter, copied from the large plates that hang in the N. Y. Academy of Medicine, represents the Hieron or Sacred Grove containing the Temple, the Tholos or Sacred Well, the Abaton or the dormitory of pilgrims, and the Temple of Artemis.

The paper by Dr. Sachs on "Hindoo Medicine" contains a most interesting selection of legends and extracts taken from Hindoo philosophy, and arranged to give some conception of the mingled philosophy and superstition of the Indian practitioner of old. The curious ideas concerning generation, consumption, fevers, surgery, and the express direction concerning the phases of the moon and the influence of devils to be observed in operations, together with a description of the Ayur

Veda, the medical classic of India form an original contribution to American literature.

Dr. Gerster's article on the Hippocratic Doctrine of the Injuries of the Cranium and The Ophthalmology of the Greeks by Dr. Ward A. Holden are bits of medical antiquity; while several articles in lighter vein are to the point and amusing.

Three poems of Dr. Peterson's are excellently illustrative of the writer's ability to embody the spirit of science in poetry. The verses entitled Heredity are as beautiful as they are powerful.

The volume is finely printed and artistically made. The number of copies of this edition is very limited. It will doubtless be soon difficult to obtain, as the character of the club work and the reputation of its few members makes their work especially interesting to men who love their libraries.

Diseases of the Skin. A Manual for Students and Practitioners. By Joseph Grindon, Ph.B., M.D., Professor of Clinical Dermatology and Syphilis, Washington University; Dermatologist to the O'Fallon Dispensary, etc. Series Edited by Bern B. Gallaudet, M.D. Lea Brothers & Co., Philadelphia and New York.

Although this is classed as one of a series of pocket text-books it covers the field of dermatology so thoroughly that it seems worthy of a more dignified appellation, and as a matter of fact, for completeness and practical utility it outranks many a more pretentious publication. The compactness of the volume has been attained simply through the omission of all discursive padding and a terse method of arrangement and discussion. The usual system of classification is followed fairly close and each disease is considered in paragraphs under the headings of Synonyms, Definition, Description, Etiology, etc., which, in very few words, give a good idea of its nature and, what is perhaps of even greater practical importance, of the most promising methods of treatment. The work differs greatly from most of the shorter text-books gotten up mainly to aid students in cramming for examinations in that it is not a simple condensation or compilation from the standard treatises but embodies the results of the work and experience of a trained clinician whose observations are sufficiently original and authoritative to command attention from every one. The subject-matter is also presented much more attractively than is usual and the sprightliness of the author's style makes very entertaining reading.

The illustrations are above the average and the binding is unusually artistic for a medical book.

Therapeutics of Dry Hot Air. By Clarence Edward Skinner, M.D., LL.D. A. L. Chatterton & Co., New York.

There are no affections that are the occasion for more opprobrium to medical therapeutics than certain chronic conditions of the joints usually classed under such headings as rheumatism, sciatica, old sprains, arthritis deformans and local septic affections. The treatment of these affections with lithemia, neuralgia and myalgia has of late years been decidedly improved by the introduction of the hot air, or baking method. With proper precautions a temperature of 300 to 400 degrees can be borne for a considerable period by a chronically affected joint and the limb comes out from the treatment much more supple and consequently the source of less discomfort than before.

Dr. Skinner says very well that though the use of dry superheated air as a therapeutic measure has been before the medical profession for several years, yet it is still for the average practitioner an unknown quantity. His idea is to supply this want in our therapeutics. He accomplishes his purpose in a very simple, practical way. Each of the conditions noted above, as well as pneumonia, pleurisy, chronic peritonitis, and some others are touched upon and the technical details for their treatment demonstrated by a man who has himself manifestly made use of the methods he describes. His book then is likely to be of service to all those who are interested in mechanical therapeutics for chronic ailments and its consultation by the profession will be likely to take these diseases more and more from the hands of the charlatan and the osteopath.

How to Succeed in the Practice of Medicine. By Joseph McDowell Mathews, M.D., LL.D., President of American Medical Association, 1898-99, etc. John P. Morton & Company, Louisville.

Dr. Mathews has certainly had the experience that would enable him to write a book of this kind for the profession and even casual reading of it shows that he has used his opportunities well. He says that he has tried to write a guide to success, intended principally for medical students and young practitioners of medicine. As to his success in accomplishing this object, those for whom the book was especially written will be the best judges. Dr. Mathews is almost too modest, however, when he says that he hopes the book may give some comfort and advantage to a few struggling young doctors at least. No one who takes his profession of medicine seriously will fail to find many things that are of interest in the book. Such chapters as "The Young vs. the Old Doctor," "The Country vs. the City Doctor," "Art in Medicine and some Rare Types That You Will Meet," The Smooth Doctor, the Church Doctor, the Fool Doctor, the Lodge Doctor, the Newspaper Doctor, the Book-worm Doctor, the Effeminate Doctor, the Over-polite Doctor and the Unsuccessful Doctor, promise good things and the promises are fulfilled. Every practitioner will have his ideas clarified by reason of Dr. Mathews' book.

A Reference Handbook of the Medical Sciences. By various authors. A new edition. Edited by Albert H. Buck, M.D., of New York. Vol. V. Inf. Mos. William Wood and Company, New York.

We have praised the earlier numbers of this splendid work in unmeasured terms and feel, with the appearance of each new volume, that the habit grows. This present volume is most excellent.

From Inflammation, the introductory article, a model of clear and philosophic description, not equaled anywhere in any article of similar proportions, to Mosquitoes, this fifth member of the Handbook is filled to repletion with good and useful articles.

The series of articles on Insanity is entitled to more than passing mention. They are a text-book in themselves and a most excellent one. Stewart Paton has contributed the article on Classification and he gives the Kraepelin classification in full; H. J. Berkeley considers the general "etiological factors," Adolf Meyer has an admirable short summary of the general pathology; The General Symptomatology is written by Charles P. Bancroft, and is excellently illustrated; H. A. Tomlinson contributes on the general diagnosis and Henry R. Stedman on the Prognosis. General Treatment and Care is taken by Theodore H. Kellogg; Medicolegal Aspects is ably discussed by Henry E. Allison. Following this several of the more pronounced forms are given; Confusional Insanity by Edward B. Lane; an interesting and highly suggestive paper by William A. White on the Alcoholic and Drug Intoxications follows;

General Paralysis is described in full by H. M. Bannister; Insanity of Cerebral Disease is by the same author; Insanity of the Neuroses is a suggestive article by W. E. Fisher. Henry R. Stedman considers Dementia Praecox, and A. E. Brownrigg has a careful and interesting article on Senile Insanity. Climacteric Insanity, Melancholia, Manic-Depressive Insanity, Mania Degenerative Insanity, Paronoia, Puerperal Insanity, Thyreogenic Insanity, and Idiocy and Imbecility complete the series with such well-known observers as Pearce Bailey, Defendorf, Hoch, Tuttle, Keniston, and others as authors. The collection of articles is an authoritative one.

Other noteworthy articles are on the Iris, Intestinal Surgery, the Joints, the Jaws, Kidneys, Labor, Larynx, Liver, Lungs, Lymphatics, a truly excellent and modern contribution, Mastoid Operations, Metabolism, Military Hygiene, Milk.

There is but one discordant note in this truly revised work and that seems to be in the domain of inorganic materia medica. There seems to have been no attempt made to correlate the many numerous studies that have been made in recent years on the pharmacology of these inorganic compounds, studies which are as important as any others in the domain of pharmacodynamics. The relationships of the study of physical chemistry and the action of the inorganic salts, an absolutely essential conception in the study of these compounds, is not even hinted at.

The work is of such superior character that this minor blemish should be corrected.

Biographic Clinics. The Origin of the Ill-Health of De Quincey, Carlyle, Darwin, Huxley and Browning, by George M. Gould, M.D., Editor of American Medicine, etc. P. Blakiston's Son & Co., Philadelphia.

Dr. Gould's little book has attracted no small amount of attention and is a distinct contribution to a phase of medical history in which there will yet be many other monographs. There is no doubt that there are many accepted historical statements that will have to be modified in the light of our present knowledge of medicine. As has been pointed out a number of times of late, some of the stories of poisonings in history will have to be modified by the recent information with regard to appendicitis, gynecological diseases and other abdominal conditions.

Dr. Gould has taken the one idea of eye-strain and has shown that it is not improbable that much of the long years of illness on the part of these five great English writers was really due to the fact that they were suffering from overuse of eyes whose refractive powers needed correction. The book is well worth the reading. It involves a detailed study of the lives of these men that shows how thoroughly conversant the writer is with the pathological conditions present.

Perhaps the ideas have been pushed too far. There are even eye specialists who would not agree in attributing so many symptoms as Dr. Gould does, even to the severest of eye-strains.

The Earth in Relation to the Preservation and Destruction of Contagia. Being the Milroy Lectures at the Royal College of Surgeons in 1899. By George Vivian Poore, M.D., F.R.C.P., Professor of the Principles and Practice of Medicine, University College, London. Longmans, Green & Co., New York, London, and Bombay.

This work contains some 14 Milroy lectures and eight more miscellaneous papers on general sanitary subjects. The Milroy lectures have the great merit of being short, averaging less than ten pages each; they include short accounts of tetanus; anthrax; diarrhea, dysentery, and cholera; Malta fever, plague, diphtheria; malaria, blackwater fevers, tsetse fly disease, louping ill, Texas cattle fever, horse sickness; enteric fever; the Maidstone epidemic.

Immunity and dangers of wounds occupy a chapter, agriculture and miscellany occupy four of five of the remaining chapters in this series.

The work contains much matter that is well-known woven in an interesting manner. There is little that is new, or be it said, with bated breath, that is modern. So far as the main argument is concerned there seems to be little support even in the author's own writings that the soil has much to do with disease, tetanus perhaps being the only organism that unquestionably and habitually inhabits that medium.

It would seem that a clearer presentation of actual modes of contagion might have been more profitable, yet it is of interest to see how meager and thin the soil theory of disease has become.

The papers on general sanitation and agricultural problems are admirable and interesting.

Medical Microscopy. Designed for Students in Laboratory Work and for Practitioners. By T. E. Oertel, M.D., Professor of Histology, Pathology, Bacteriology and Clinical Microscopy, Medical Department, University of Georgia. P. Blakiston's Son & Co., Philadelphia.

This is an excellent, practical manual and admirably adapted to the use of beginners in microscopical science. This is particularly true of the introductory chapter on the microscope which is short, well expressed and contains the facts that every worker with a microscope should thoroughly master. The chapters on microscopical methods are also concise and useful.

There are further chapters on Bacteriological Technic and the Pathogenic Bacteria; Tumors, well illustrated; the Blood, this chapter might have been illustrated to advantage; the Urine, Sputum and Feces.

The scope of the work is thus seen to be one for beginners and it very well deserves praise and good fortune.

Obstetrical Nursing for Nurses and Students. By Henry E. Tuley, A.B., M.D., Prof. of Obstetrics, Kentucky University, Medical Department; Visiting Obstetrician to the John N. Norton Memorial Infirmary, Louisville City Hospital, etc. G. P. Engelhard & Co., Chicago.

This little book is of unusual worth, and should prove to be a valuable aid to both nurses and beginning students in the study of obstetrics. It is both comprehensive and lucid, taking in all that is useful and practical for the proper training of a good obstetrical nurse. The various essentials in the care of the patient and the child are set forth so that the laymen as well as the nurse or student has no difficulty in understanding the rationale of the physician's objects and ideas.

In some few places the author is somewhat at variance with the more modern ideas of the care of the child. He advises that the veil, which has long since been discarded, be placed over the child's eyes the first few times that it is taken outdoors. This is the delight of the oculist and affords him an opportunity to swell his practice. We doubt the benefit to the child.

On page 92 is to be found a picture that is open to most scathing criticism. There is represented the proper application of the forceps. The nurses and attendants are clad in sterile gowns while the operator applies the forceps without taking the pains to remove his coat or cuffs. In the light of such a display, it would seem doubtful that he had considered it worth his while to wash his hands. Such pictures are not fit to be published, as they are liable to do a great deal of harm.

There are excellent lists of articles for the mother to prepare previous to her confinement, which are both sensible and reasonable. Ordinarily these lists are impossible and so expensive that they are both beyond the understanding and pocketbooks of those for whom they are intended.

The last chapter of the book is given up to the preparation of the various foods that may be of service during the puerperium. The recipes are simple and easy to carry out.

THE AMERICAN YEAR BOOK OF MEDICINE AND SURGERY. Being a Yearly Digest of Scientific Progress in all Branches. Drawn from Journals, Monographs and Text-books, both American and Foreign. Edited by GEO. M. GOULD, M.D. Volume on Medicine. W. B. Saunders & Co., Philadelphia.

IT is not at all surprising that this volume, although not characterized by the presentation of any extraordinary developments in medicine, should present an immense amount that is interesting and valuable. It of necessity reflects to at least the usual degree, the influence of surgical work and this is noticeable for instance in the articles touching on the diseases of the pancreas. Mayo-Robson gave a tremendous impulse to the study of pancreatic disease in this country by his classic address on the subject in Washington three years ago, and the borderland between the surgery of the pancreas and technical medical disorders of that organ is very cloudy.

A point that is particularly interesting in the volume is the attention which is given to parasites. This is probably the outcome of the great activity of our government workers in Washington, and it presents a great deal of work in this department of medicine in a most interesting manner. There is a large space devoted to pediatrics. The ever-present problem of milk in infant feeding occupies a great portion of the space. Very naturally, under general medicine, one finds that a great deal of consideration has been given to tuberculosis, the natural outcome of Koch's communicaton to the English Congress. That and abstracts of dissertations bearing on the spitting nuisance form the bulk of this chapter. The final chapters of the book touch most interestingly on the management and control of infectious diseases, on general hygiene food, drink and poisons and vital statistics. The newer drugs are also given adequate space so that in every way the book is an excellent example of modern progressive medicine. It is well printed and well made in every way and can but form a valuable adjunct to the library of student or practitioner.

A HANDBOOK OF MATERIA MEDICA, PHARMACY AND THERAPEUTICS. Including the Physiological Action of Drugs, the Special Therapeutics of Disease, Official and Practical Pharmacy, and Minute Directions for Prescription Writing. By SAM'L O. L. POTTER, A.M., M.D. Formerly Professor of Principles and Practice of Medicine in the Cooper Medical College of San Francisco; etc. Ninth Edition, Revised and Enlarged. P. Blakiston's Son & Co. Philadelphia.

DR. POTTER'S Handbook now has over 900 pages of text and fifty pages of index, so that it has grown out of the proportion of a handbook in the ordinary sense of the word. It would remind one in certain ways of the German Handbücher which sometimes reach such immense size as absolutely to require a stand to hold them. Dr. Potter's book has increased in value as in size. In fifteen years it has reached its ninth edition and it well deserves the popularity it has enjoyed.

This present edition has been very carefully brought up to date. It is announced in the preface that in the section on materia medica thirteen articles were rewritten and forty new articles were inserted. The new matter includes paragraphs on such subjects as argentamin, argonin, creosotal, dionin, dormiol, eucain, the glycero-phosphates, heroin, holocain, iodothyrin, nervanin, orthoform, protargol, urotropin and zinc stearate. In the section on therapeutics new articles were inserted on local anesthesia, beriberi, dhobie itch, and tropical fevers which have taken on a new interest since our acquisition of tropical territory. New articles are also written on heat stroke, hemoglobin uric fever and bubonic plague.

The volume is a model of good typography. The type chosen and the arrangement of paragraphs with capitalization and the use of smaller type for less important material in easily recognizable gradation is especially commendable. We prophesy for the present edition an even greater popularity than for former editions. Dr. Potter deserves well of the profession of America for the work he has done in making a very practical handy reference book of three important subjects.

BOOKS RECEIVED.

The MEDICAL NEWS *acknowledges the receipt of the following new publications. Reviews of those possessing special interest for the readers of the* MEDICAL NEWS *will shortly appear.*

THE NURSING PROFESSION. Edited by Sir Henry Burdett. Fourth Year. The Scientific Press, London.

EIGHTEENTH ANNUAL REPORT OF THE BUREAU OF ANIMAL INDUSTRY. 8vo, 706 pages. Illustrated. Washington, D. C.

THERAPEUTICS OF DRY HOT AIR. By Dr. Clarence Edward Skinner. 8vo, 200 pages. A. L. Chatterton & Co., New York.

TRANSACTIONS OF THE AMERICAN ORTHOPEDIC ASSOCIATION. Vol. 15, 1902. 8vo, 216 pages. Illustrated. Philadelphia.

THE PRACTICAL TREATMENT OF STAMMERING AND STUTTERING. By G. A. Lewis. 8vo, 415 pages. Illustrated. Detroit.

THE PROCEEDINGS OF THE CHARAKA CLUB. Vol. I. 8vo, 97 pages. Illustrated. William Wood and Company, New York.

ANATOMY. By Dr. William H. Rockwell, Jr. 8vo, 620 pages. Illustrated. Lea Brothers & Co., New York and Philadelphia.

A TEXT-BOOK OF NURSING. By Clara Weeks-Shaw. Third Edition. 8vo, 396 pages. Illustrated. D. Appleton & Company, New York.

ANNUAL REPORT OF THE DEPARTMENT OF THE INTERIOR. Commissioner of Education. I. 1901. Government Printing Office, Washington.

THE PRACTICAL MEDICINE SERIES OF YEAR BOOKS. Vol. II. General Surgery. Edited by Dr. John B. Murphy. The Year Book Publishers, Chicago.

DISEASES OF THE EYE. By Dr. G. E. DeSchweinitz. Fourth Edition, 8vo, 773 pages. Illustrated. W. B. Saunders & Company, Philadelphia and London.

CANCER AND OTHER TUMORS OF THE STOMACH. By Drs. S. Fenwick and W. S. Fenwick. 8vo, 362 pages. Illustrated. P. Blakiston's Son & Co., Philadelphia.

A TEXT-BOOK OF PHARMACOLOGY AND THERAPEUTICS. By Dr. A. R. Cushney. Third Edition. 8vo, 755 pages. Illustrated, Lea Brothers & Co., Philadelphia and New York.

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ORIGINAL ARTICLES.

SOME TYPES OF RETINITIS AND CHORIO-RETINITIS.*

BY ALEXANDER DUANE, M.D.,
OF NEW YORK.

I SHALL ask you to-night to consider certain types of retinal and chorioidal disease which seem to be pretty well defined and are fairly common, yet which have received rather scant notice in our text-books. I do so the more readily because neither the etiology nor the pathology of these special types has been defined with absolute precision and there seems a good deal yet to learn regarding them; indeed, in many cases it has not been decided whether the process is primarily situated in the retina or in the chorioid, although ultimately, doubtless, both membranes are always involved.

Focal Exudative Chorioretinitis.—Every now and then we meet with a case with characters more or less resembling the following:

Case I.—Kate M., a woman of twenty or twenty-five years, came to the Ophthalmic and Aural Institute complaining simply of muscæ volitantes before the left eye for the preceding three weeks. Right eye, normal. Vision $= {}^{20}/_{30}+$ with correction. In the left eye, outline of disc appears blurred and retina hazy; somewhat above and to the temporal side of the disc but not more than a papilla-breadth from it is an irregular, altogether ill defined, very brilliant, white acuminated mass over which courses a tortuous retinal vessel; this mass rises abruptly from the surrounding fundus and has a considerable elevation. There are no other patches in the fundus, which otherwise appears quite normal.

In the course of a week the spot had become much less white and appeared rather less prominent but more defined.

Cases of this sort, in which an isolated, often quite prominent exudate appears somewhere in the vicinity of the optic disc and without much inflammation either of the latter or of the rest of the fundus, occur not so very infrequently, especially in young people, and generally without any well defined cause. With rest and absorbent treatment they usually resolve pretty speedily, sometimes within two or three weeks, and often leave no bad results behind, except, it may be, a partial scotoma.

These cases are usually thought to be chorioidal in origin, the retina being involved only secondarily, yet we sometimes find *the retina involved very markedly from the first,* and possibly there may be cases in which the process is retinal from the start. The following case was one in which the retina was thus prominently involved.

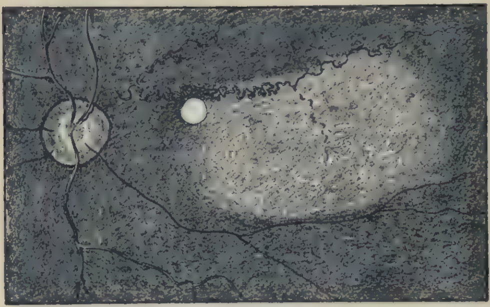
Case II.—A. B., a man of twenty years, came to the Ophthalmic and Aural Institute complaining that the sight of the left eye had been blurred for two weeks. Left eye, $V = {}^{20}/_{70}$, when first seen; three days later, ${}^{20}/_{100}$. Slight blurring of the outlines of the disc and moderate engorgement of the vessels. Between the disc and the macula and just below a line connecting the two, is a hazy, whitish area larger than the disc; at the macula is a faint, reddish spot. Eight days later, vision ${}^{20}/_{200}$; disc as before; the reddish spot still present. Area of infiltration shows a whitish radial striation, is irregularly swollen, and presents evidences of a marked edema of the retina; chorioid surrounding it appears redder than normal; retinal vessels run over the exudate without any very great bending, and in no place are concealed by it.

Here we have to do evidently with a chorioidal exudate, which, however, was associated with an unusual degree of edema of the retina, so that the appearances strongly suggested a retinal detachment.

A third case in which the process seemed almost purely retinal, was the following:

Case III.—Fannie L., aged forty-two years, came to the Ophthalmic and Aural Institute complaining of a cloud before the sight which had lasted for two or three months, but during the last two or three days was much more pronounced. Vision, right eye with correction ${}^{20}/_{30}$; left, ${}^{20}/_{200}$, and in the left there is an incomplete central scotoma. Right eye, interior normal.

Fig. 1.



EXUDATIVE FOCAL CHORIOIDITIS WITH MARKED TRANSUDATION INTO THE RETINA (PARTLY SCHEMATIC).—A brilliant-white small, sharply circumscribed exudate occupies the region of the macula lutea. Temporally from this is an area of white exudate and edema occupying the most anterior layers of the retina. Vessels adjoining this area tortuous (tortuosity much exaggerated in the drawing) and one entering the mass of exudation is partially buried by the latter. Remaining vessels, optic disc, and the rest of the fundus normal. General mass of edema and exudation cleared up rapidly, the small, brilliant-white exudate more slowly, but all ultimately disappeared, leaving the whole fundus apparently normal.

In the left eye, extending temporally from the disc and beginning at a distance of 1½ to two disc-diameters from it, is a lobulated white mass about three disc-diameters long, traversed by retinal vessels, which in part are buried in it, one vessel in particular being interrupted a number of times as if the blood current was broken. (Fig. 1.) Mass not especially elevated except at nasal end, where there is a portion more superficial, and brilliant white, like an exudate of albuminuric retinitis; the rest of the mass is less white, and fades off at the temporal side into the retina, while above and below it is rather sharply circumscribed. Surrounding retina somewhat hazy, and vessels, especially one skirting the upper border of the mass, tortuous. Disc normal, except that the veins are perhaps somewhat enlarged. No hemorrhages anywhere. Urine contains neither albumin nor sugar; no arteriosclerosis, but tension of the vessels is very high.

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* Read before the Ophthalmological Section of the New York Academy of Medicine, November 17, 1902.

Patient received calomel in $^1/_{10}$ grain doses five times a day. The general mass faded pretty rapidly, being almost gone in three or four weeks, but the brilliant patch, which lay just above the macula, resolved more slowly. A few punctate hemorrhages appeared in its vicinity, as it absorbed. In two months, spot had disappeared; and in three months and a half, there was no trace of what had taken place except a few glistening dots in the macula and a faint stripe of opacity near it. Vision in the left eye 2½ months after she was first seen was $^{20}/_{30}$; semi-annular paracentral scotoma down and in from fixation-point.

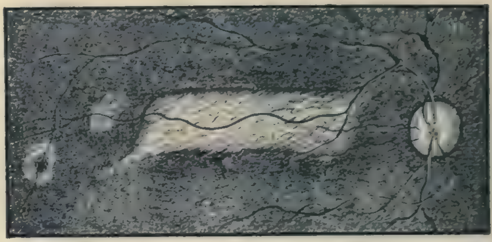
Here we have a large mass of exudate in the most anterior layers of the retina without disorganization of the nerve elements and, indeed, without any destructive effect upon either chorioid or retina. Whether a case like this can be ascribed wholly to a transudation from the chorioid, or may not also be due to an exudate derived directly from the retinal vessels, seems a matter of considerable doubt. The exudate was distinctly in the retina, and in fact in its most anterior layers. Yet the non-implication of the retinal vessels and the optic nerve in the case of an exudate lying as close to the disc as this, would seem to show that the retina was not actively inflamed, but simply afforded lodgment to a transudate that had penetrated into it from the chorioid. This view of the case is rendered the more likely on account of the rapidity with which the exudate cleared up and the almost complete restoration of function.

Summarizing the features presented by these cases and others more or less similar, that we meet with, we may say: Cases of the type here considered are distinguished by their acute onset, rapid course, and on the whole favorable prognosis. They occur especially in young people and often without assignable cause. They are marked by the presence of a single circumscribed exudate situated usually not very far from the optic disc; forming a whitish mass, which may be either prominent and pointed or low and flattened, and which is often associated with considerable edema and milkiness of the surrounding retina, but not often with much engorgement of the papillary vessels or much swelling of the nerve.* The amount of impairment of vision depends on the site of the exudate, varying from $^{20}/_{70}$ or better to $^2/_{200}$ or $^3/_{200}$. A more or less absolute scotoma, which may be either positive or negative, frequently remains even after the vision is otherwise restored to normal. The salicylates, calomel in broken doses, and rest in bed seem to furnish the best treatment.

Plastic Chorioretinitis.—A case, which in the beginning must have been closely allied in appearance, at least, to Case III, just described, was

Case IV.—M. S. B., a man of sixty-eight years, came to me stating that the sight had been diminishing slowly for nine years in the left eye and for four years in the right. Notices that centre of objects looked at directly is covered by a dark object; vision is distinctly better at night or on dark days. He also states that his urine has been examined repeatedly during the past five years and found normal. Just before his sight failed he had an attack of typhoid fever. His temporal arteries are tortuous, but the arteries in general and the pulse appear quite normal. Patient has been absolutely deaf since the age of two—evidently a case of nerve deafness, the drum membranes being quite normal. Vision in each eye $^{15}/_{200}$ by eccentric fixation; refraction about emmetropic; large central scotoma in both eyes. Discs in both eyes and vessels apparently normal. No abnormal temporal pallor of the discs. In the right eye (Fig. 2) a whitish, cloud-like patch with no very sharply defined edges begins about one disc-diameter from the temporal margin of the disc and extends about four disc-diameters outward. One of the branches of the superior temporal artery courses along the patch and sends branches across it; one or two other branches from the disc run out upon the patch and terminate in it, being apparently lost in its substance. At the temporal end of the patch are two other smaller and fainter patches, both of which are crossed by retinal vessels; the outer of these has a slight shading of pigment in the middle.

Fig. 2.



PLASTIC CHORIORETINITIS WITH FORMATION OF A THIN MEMBRANOUS EXUDATE (PARTLY SCHEMATIC).—Temporally from optic disc is a tenuous membrane-like deposit of connective tissue apparently occupying the superficial layers of the retina and traversed by unchanged retinal vessels, which in places lose themselves in its substance. To the outer side of this two fainter but similar deposits, also traversed by retinal vessels. (The vessels, except those that cross the exudates, are not indicated with any precision; moreover, the drawing very inadequately represents the tenuous, membrane-like appearance of the main exudate). Disc and surrounding fundus normal.

In the left eye similar patches, but more variegated, all in the region of the yellow spot, are found, namely: (1) Near the disc on the temporal side, a faint, ill-defined, yellowish spot, one-eighth the size of the disc, crossed by retinal vessels; (2) one or two very bright, white, clear-cut patches about one-fourth the diameter of the disc and close to the latter; (3) also near the disc on the temporal side a fleecy, faint, whitish patch of larger size and ill-defined outline. All these patches are in intimate relation with some retinal vessel; (4) to the temporal side of disc, a large, irregular but generally elevated patch, whitish and not very sharply outlined, more or less traversed by retinal vessels, which in places appear to lose themselves in the substance. Here and there over it are brownish or inky, punctate pigment blotches, which seem by preference to lie beneath the retinal vessels; there is also on it, near its border, a faint reddish spot, which is in immediate relation with a small retinal vessel.

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* Pigmentation was not present in any of the cases that I saw, nor were deposits observed upon the posterior surface of the cornea. In these regards the cases differed from those described in the excellent paper by Friedenwald (Trans. of Am. Ophth. Soc., 1902, p. 577), which I did not have an opportunity of consulting, as it was not published until after the present article went to the printer. In most points Dr. Friedenwald's observations and mine agree except that he very often finds the focal region situated far from the disc.

The patches in both eyes are little if any elevated; look quite flat and membrane-like; are apparently in the superficial layers of the retina, and are all in evident relation with small retinal vessels, which in general run across them without a bend. The vessels themselves and adjacent fundus are quite normal; no aggregation of pigment and nothing to indicate migration of pigment epithelium.

The only other abnormality is in the left lower fundus some considerable distance from the disc. Here is a round area about the size of the disc which is of a lighter red than the surrounding fundus, and is separated from it by a fine but distinct line of demarcation, so that the area looks like a hole in the retina; some light brownish, smoky pigment stripes cross it, as does a fine retinal vessel. Chorioidal vessels not seen.

From the character of the patches and their relation to the retinal vessels I took them to be organized fibrinous exudates lying in the most superficial layers of the retina, but not, as in retinitis proliferans, extending into the vitreous. From the absence of temporal pallor in a case of such long standing, I inferred that the ganglion cells in the macula had escaped destruction, and that the retina was, so to speak, covered by the patches and not destroyed by them. Acting upon this hypothesis and believing that the case was not therefore positively incurable, I put the patient upon absorbent treatment, first calomel in small, broken doses, and then the iodides, with the result that in the right eye the central patch slowly diminished in size, fading at the edges. The improvement in vision was but slight, although the scotoma has diminished so that it now just skirts the fixation-point. In the left eye no improvement in subjective and little in the objective conditions has been secured. The case is still under treatment.

This, then, was a case, which, beginning with an exudate, possibly a hemorrhage, in a situation very similar to that occupied by the exudate in the case last described, went on to organization instead of resolution and formed a *thin membrane-like patch* in the most superficial layers of the retina. It was a case then, of what we may denominate a plastic retinitis, but one in which the organized exudate was very tenuous and did not extend either forward into the vitreous nor backward into the depths of the retina or chorioid.

Of solider consistency and greater prominence were the products in

Case V.—Sarah M., aged thirty-eight years, came to the Cornell Dispensary with a history that the sight had been failing for four months. Diagnosis of chorioretinitis of specific origin was made and patient was put upon mixed treatment. When I entered on service in the Dispensary she had already been under treatment five months.

In the fundus of both eyes are numerous scattered or aggregated oval or circular, pale reddish spots about one-sixth to one-twelfth disc-diameters in size, strewn along the retinal vessels or in places lying between them; toward the periphery of the fundus, spots more confluent so as to form irregular, jagged, whitish, sharp-cut areas.

In the right eye are several large, elevated, pure white masses, several times the size of the disc; one of these, just above the macula, projects nearly one millimeter above the surrounding fundus. Retinal vessels run over the masses and in places bury themselves in them. The masses are not bordered by pigment, although there is some pigmentation in the rest of the fundus. Down and in from the optic disc and distant one disc-diameter from it, is a pale, grayish-white, hazy mass, one-half disc-diameter in width, which extends into the vitreous. Overlying the optic disc and the papillary vessels is a diagonally placed white bar of connective tissue.

In the left eye the disc is rather atrophic; a white, sickle-like bar of connective tissue jutting out nearly a millimeter in front of the disc, runs concentric with its nasal edge and covers the vessels. No hemorrhages in either eye.

Quite recently (a year after my first observation of the case) new exudates have appeared, especially in the left eye, and increased proliferation has taken place in some of the organized exudates, which now extend further into the vitreous, forming projecting, partly fleecy masses (retinitis proliferans).

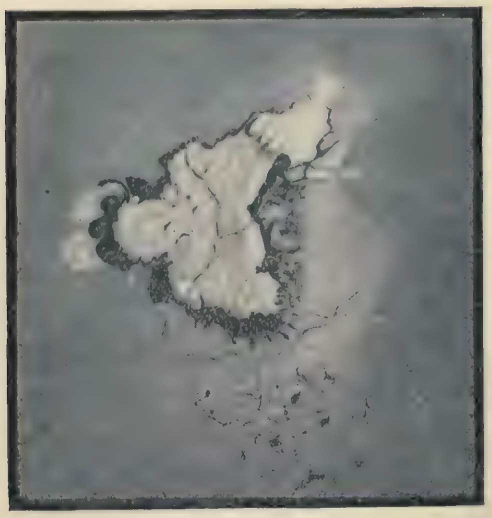
Here we have a diffuse chorioretinitis associated with organization of some of the exudates so as to form prominent patches or *projecting outgrowths of connective tissue;* in other words, it is a condition in which with the ordinary changes of a disseminated inflammation of the chorioid and retina, there was combined a plastic retinitis, which differed from that of Case IV in that the products of organization were denser and deeper.

In other similar cases the chorioiditic element may fall into the background, and the plastic process form the prominent feature of the case, as for instance in

Case VI.—Alice H., aged ten years, came to me to be examined for glasses. She had maculæ of the cornea in both eyes and pretty marked irregular astigmatism. In the left eye, below and to the outer side of the macula was a large, brilliant, sharply outlined, white mass, irregular in shape but generally quadrangular, bordered here and there by heavy black pigment and traversed by retinal vessels, which in the main are unchanged, although some of the lesser branches look as though cut off or obliterated. Still further below this is a series of pigmented patches extending well toward the periphery, some lying within white patches, others within small decolorized areas of the chorioid. The chorioid surrounding the large white patch is more or less atrophic. The patch itself is elevated everywhere about a millimeter and a half above the surrounding fundus, although it presents in places (especially above) irregular vividly white prominences. It also sends out one or two spurs into the surrounding fundus. Corresponding to this patch was a large, absolute scotoma occupying most of the upper and inner quadrant of the field of vision.

During the nine years that have elapsed since the patient was first seen, the patch has changed somewhat in shape and has become more densely pigmented. The disseminated spots of pigment in the outlying fundus have also become darker and have assumed a spider-like form like the spots of a retinitis pigmentosa. (Fig. 3.) A year or so after she first came under observation the right eye developed a slight disseminated chorioiditis near the disc which remained, and which six years later showed a slight exacerbation that prevented her from using her eyes for several months. She also had one or two attacks of episcleritis and recurrent corneal irritation in this eye.

Fig. 3.



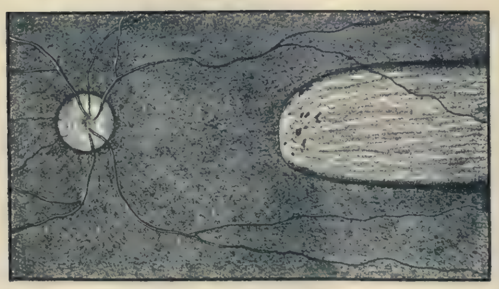
PLASTIC CHORIORETINITIS.—Down and in from the macula is a large plateau-like white mass of connective tissue irregularly elevated, but in general about 1.5 mm. above the surrounding fundus. Heavy black pigment borders and overlies the patch, which sends spurs out into the surrounding fundus. Below patch and extending to periphery of fundus is a series of black spider-like pigment spots with atrophy of surrounding chorioid.

In this case the plastic process produced a *large plateau-like elevation of connective tissue* associated with a slight degree of chorioiditis.

Somewhat similar were the findings in

Case VII.—Isaac L., aged twenty-four years. Left eye practically normal. Right eye, posterior cortical cataract with some peripheral striate opacity. Disc normal. In the nasal fundus a group of minute spots of chorioidal atrophy and pigmentation. Beginning three or four disc-diameters to the nasal side of disc is a white, sharply defined, oblong mass, one to 1½ disc-diameters in breadth and extending horizontally to the left so as to girdle the nasal fundus throughout its whole extent as far as its anterior visible limits. The mass is elevated about one millimeter above the rest of the fundus, is crossed by retinal vessels, and is bordered on one side by a very narrow rim of black pigment, on the other side by an ashen gray irregular lining. One or two punctate hemorrhages lie on the mass at its posterior end. See Fig. 4.

Fig. 4.



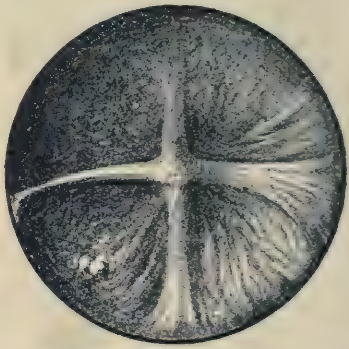
PLASTIC CHORIORETINITIS. (PARTLY SCHEMATIC).—Large mound-like mass of connective tissue, elevated 1 mm. above the surrounding fundus, and girdling the nasal retina to and beyond its anterior visible limits. There are a few spots of chorioidal atrophy in nasal fundus, which are not shown in the drawing.

The two cases just described in which large masses project some distance into the vitreous, form a transition between the cases of plastic chorioretinitis with thin membrane-like products as in Case IV or cases with large nodular outgrowths which are still mainly buried in the substance of the retina as in Case V, and cases of true *retinitis proliferans* in which masses of varying size jut far out into the vitreous. It will be noted that a slight degree of retinitis proliferans was shown in Case V, where connective-tissue-like processes projected out in front of the optic disc in both eyes.

The same plastic process, but carried to an extreme degree, was present in the following:

Case VIII.—Fannie L., aged eleven years; no history of injury at time of birth or since; convulsions at the age of five; has had diphtheria and measles; otherwise no history bearing on the case.

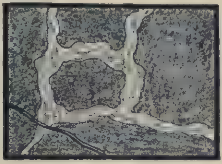
Fig. 5.



PLASTIC CHORIORETINITIS (TYPE OF RETINITIS PROLIFERANS).—Connective-tissue masses, lying directly behind the lens, as seen by direct illumination of the pupil. The masses form a horizontal membranous arch with convexity directed backward. The arms of the arch extend forward and are lost behind the lens. From the under part of the arch a fan-like process extends downward and forward, being apparently inserted in the ciliary region beneath and on the inner side of the lens. From the upper part of the arch a dense membranous strand stretches backward and merges in a large membranous mass which covers the whole retina at the posterior pole of the eye, and is attached to the retina at various points.

Right eye: V= perception of light; projection rather uncertain. Behind the lens is a large, white membranous arch (Fig. 5) with convexity directed backward; one arm of the arch runs horizontally forward and outward, being inserted beyond the temporal border of the lens; the other arm extends downward, forward and somewhat inward, and expands into a fan-like process which is inserted beneath and to the inner side of the lens. From the concavity of the arch another process extends downward and forward forming a fan-like insertion beneath the lens. From the convexity of the arch a band extends backward and upward, and is attached in the extreme upper part of the retina. An expansion of this band covers the site of the optic disc and macula completely, so that the latter, if present, are quite invisible. The mass in general is very dense and thick, but its outlying portions appear in places spread over the retina in the form of flat, thin, translucent fringes of membrane, or thin, flat reticulate bands (Fig. 6). The retinal vessels cross these, and in places climb up on the surface of the general mass; in other places are buried by the latter.

Fig. 6.



In the upper fundus are small atrophic patches; among these, on the temporal side, is a twisted, membranous connective-tissue strand close to the retina. In the nasal fundus some of the atrophic patches are larger and disclose the chorioidal vessels. From one of these larger patches a small, white, flocculent mass projects into the vitreous. No pigment patches anywhere and no hemorrhages.

Left eye, perfectly normal.

This case is not unlike that described by Wintersteiner (*Arch. f. Augenheilk.*, XXVIII, and *Archives of Ophth.*, 1895, p. 197). Wintersteiner questioned the inflammatory character of the condition he depicted, although the arguments he presented are not very convincing. Moreover, the counter hypothesis that he offers (persistence of embryonic folds in the retina) seems scarcely adequate.

In my own case the existence of an inflammatory element was shown by the presence of the patches of chorioiditic atrophy, from which some of the connective-tissue processes emanated. And to my mind the conditions present here as well as in Wintersteiner's case and in other analogous cases that I have seen, are clearly due to organization taking place in exudations which are themselves very probably the result of hemorrhage. In other words, these are simply cases of retinitis proliferans in which the processes of exudation and organization have been carried to an excessive pitch.

Still another form which this plastic process may assume is that of a *retinitis striata.* This consists of whitish stripes lying in the retina; often branched and running in general from the periphery toward the disc. Such stripes may arise from different causes, but in many instances surely are due to organization taking place in hemorrhages (Holden, *Arch. of Ophth.*, 1895, p. 147).

The examples above cited comprise only a few of the various appearances that may be presented by such organized exudates.

Summarizing the rather divergent cases that may yet be properly grouped under this type, we may say: Plastic chorioretinitis is an affection marked by pretty sharply defined, whitish aggregations of connective tissue, which may lie sunk in the substance of the chorioid or retina, or may stretch along the surface of the retina, or may project out into the vitreous. When projecting out into the vitreous they may extend as far forward as the lens or ciliary body. Such aggregations may appear under the form of flat, more or less tenuous, membranous patches; of branching striæ; of dense and thick nodular-looking masses; of large plateau-like elevations; of dense fibrous strands; or of fleecy outgrowths. These connective-tissue products are attributable to organization taking place in fibrinous exudates. The exudates themselves may develop in conjunction with a disseminated chorioiditis, which, however, is at times quite inconspicuous; or they may accompany a retinitis, in which case they very frequently originate in a patch of hemorrhage; or they may also probably occur as the result of hemorrhage without inflammation of either retina or chorioid. The underlying cause for all these changes (chorioiditis, retinitis, hemorrhages, exudates, and connective-tissue products) may be traumatism or may be syphilis, while in other cases still no cause can be made out. (In this statement I follow Weeks' etiological classification of retinitis proliferans, which I regard as simply one of the varieties of the condition under discussion.)

Once developed, the plastic products are apt to remain unchanged for years, although the slighter formations seem to be even then still capable of absorption. (See Case III.) On the other hand, especially when there are recurrent hemorrhages, the connective-tissue growths may be added to from time to time, thus causing progressive deterioration of the eye. Plastic chorioretinitis is often accompanied by a very great reduction of sight, which, however, may be due not so much to the connective-tissue outgrowths as to the associated lesions. Mercury and the iodides seem to constitute the best treatment.

Type of Retinitis Circinata.—Retinitis circinata, as described by Fuchs, is an eminently chronic affection, associated with pronounced impairment of central vision; occurring particularly in women and always after middle life; marked by a rather extensive grayish or yellowish discoloration in the macula which is surrounded by an interrupted ellipse composed of white spots, either discrete, or else coalescing, to form white, lobulated, sharply circumscribed, flat masses. The remaining fundus, the retinal vessels, and the nerve show little change.

I saw a typical instance of this affection in the right eye of

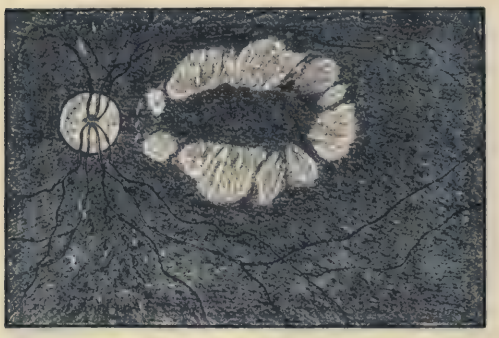
Case IX.—Rose H., aged seventy-five years, a patient in Dr. D'Oench's service at the Ophthalmic and Aural Institute. In right eye, macular discoloration, and elliptically arranged, lobulated, sharply circumscribed, white masses surrounding the macula and lying directly beneath the retinal vessels. No pigment deposits. Borders of masses in places shining, as though from colloid transformation. Rest of fundus and vessels appear normal.

The left eye had a blackish-gray, smoky pigment mass stretching across the macula; otherwise showed little that was abnormal. Vision was very greatly reduced.

We sometimes meet with cases not quite so typical. Fuchs himself admits that in diabetes and albuminuria similar lobulated masses are encountered, but without the typical arrangement. I have, however, seen a case of combined diabetes and albuminuria in which precisely the picture of a *retinitis circinata but without the macular discoloration* was present.

Case X.—D. M. J., a man of fifty years; impaired sight for fifteen months; diabetes and albuminuria. Vision, right, $^{20}/_{30}$—; left, $^{20}/_{100}$; no central scotoma; in both eyes, discs somewhat blurred but no marked neuritis; vessels small. Surrounding the macula are several large, flat, brilliant, white, striate patches with lobulated borders, resembling cumulus clouds. These patches encroach pretty closely upon the macula and form a figure of elliptical shape surrounding it (Fig. 7). In the right eye the large patches are continued to the disc by a series of small, bright spots of exudate about one-sixth the size of the disc and yellower in hue than the large patches. Similar spots are scattered here and there on the fundus, particularly in the right eye; these all lie underneath the retinal vessels. A few punctate hemorrhages occur, particularly in the right eye, and are most apparent in the periphery of the fundus; one small, dark hemorrhage lies on one of the large patches. The retina shows comparatively little edema and except for the spots looks quite normal.

Fig. 7.



RETINITIS CIRCINATA.—A case of albuminuria and diabetes, in which the exudates assumed the typical circinate form, but in which the decoloration of the macula was absent. Little involvement of the disc, and the only changes present in the rest of the fundus are a few small, brilliant, white splashes of exudate underlying the retinal vessels. (In this sketch no attempt was made to indicate the retinal vessels with accuracy nor the precise outline of the exudate, although the latter is shown with substantial exactness. The exudate was more brilliantly white than depicted.)

Fuchs is inclined to attribute the appearances observed in retinitis circinata to the presence of a fibrinous exudate poured out into the retina. Yet some cases which at least simulate a true retinitis circinata, if not actually belonging in the same category, are evidently due to organization of hemorrhages. This was seen in

Case XI.—Miss J. M. H., aged about fifty-five years, came to me in February, 1897. Diabetes for six years; impaired sight for two months. In right eye, V, with correction=$^{15}/_{40}$—; in left, $^{15}/_{20}$—; relative central scotoma, both eyes. In the right eye diffuse punctate and striate hemorrhages; edema of macula; punctate bright, white patches and punctate hemorrhages. Temporal side of disc pale.

In left eye small, bright, white spots near macula; patches underlying retinal vessels.

Hemorrhages recurred from time to time, and about a year after the first observation it was noted that the hemorrhages were replaced by shining white patches of a somewhat circinate arrangement. This appearance had vanished one year later. Vision in the right eye diminished rapidly, being only $^{3}/_{200}$ in May, 1899, and in May, 1900, =perception of movement of hands. It may be added that in November, 1898, patient had had an attack of acute nephritis.

In May, 1900, in the right eye, there are floating opacities and, near the site of the optic disc, organized white masses projecting from the retina, at least two millimeters into the vitreous. The lower part of the fundus is dark (evidently occupied by fluid blood). In December, 1900, the conditions in the patient's right eye were the same.

A few months later the patient died in an attack of convulsions.

Here we have a case in which recurring hemorrhages into the retina, due to diabetes and probably also to a complicating nephritis, produced at one time an appearance more or less resembling that of a retinitis circinata, at another time a true retinitis proliferans. The case, therefore, forms a sort of connecting link between those of Group II (type of plastic retinitis) and a true retinitis circinata; and it must be added that some authorities regard retinitis circinata anyhow as only a variety of retinitis proliferans.

THE INDICATIONS FOR OPERATIVE INTERFERENCE IN INTRACRANIAL TENSION.*

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THE recent advances in clinical medicine and clinical microscopy have opened up a new field for operative interference. Cases of coma with no external injury of the skull have heretofore been treated by the expectant plan with almost uniformly fatal results. Surgery owes much to these two departments of medicine for valuable knowledge upon a subject which is comparatively new, and which offers an additional field for operative work. Intracranial tension is a condition which a study of modern pathology has shown, calls for surgical interference. The exact line of demarcation between those cases in which conservatism is to be employed, and those in which bold operative interference is to be undertaken, is, however, not so clearly defined. It is with a view to establish some principle to guide the surgeon in treatment, that this subject is brought to the attention of the Society. During the past few months the writer has had under treatment many cases in which the indications for and against operation have been pretty clearly defined. A brief reference to and the presentation of some of these cases this evening would better illustrate the subject than any amount of theoretical discussion. Before taking up the special cases it seems pertinent to consider briefly the modern pathology of intracranial lesions. The most important preliminary step is to differentiate clearly between cerebral compression and cerebral pressure. The old classification of concussion and compression of the brain no longer attracts the attention of the surgeon. The phenomena connected with concussion are often transitory, usually not serious, and involve as a whole no important lesion of the brain. Concussion has to do with a disturbance of the fluid equilibrium, and is usually of momentary duration. If the concussion is severe, spasm of the vasomotor system occurs, and the condition simulates surgical shock.

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*Read before Alumni Society of Bellevue Hospital, Dec. 3, 1902.

Fränkel maintains that without consciousness no concussion can occur, a fact which is of great importance in medico-legal cases. For example, if a person while descending a ladder has an attack of syncope, and becomes unconscious, and then falls in consequence of his unconsciousness, he will not suffer from concussion of the brain. If he falls while conscious he is certain to receive a concussion of the brain if he does not sustain a more serious lesion. In the former case he may suffer from cerebral compression, or cerebral pressure according to the violence and extent of the injury. In the latter case he may escape both of these conditions, and suffer from simple concussion, or he may escape any concussion and suffer from a more serious injury such as cerebral compression or cerebral pressure. Concussion is a condition found in fractures of the skull as well as in trauma without fracture. The manifestations present vary greatly with the individual. The writer has made an observation from the study of innumerable cases of concussion, that as far as he knows is original. The observation is that the more highly the nervous system is developed, the more sensitive the patient is, the more highly the intellectual faculties are cultivated, the greater the degree of concussion following head injuries. The writer saw last month an untutored lad who fell six stories, through an elevator shaft and sustained a compound fracture of the skull, and who immediately arose and climbed up the six stories from which he had just fallen. On the other hand concussion may follow the slightest fall upon the head in a highly educated person. This patient who fell six stories without any shock is here to-night for examination and from his physiognomy and general appearance it is evident to all that he is of a very low grade of intellectual development. He can neither read or write, and with difficulty can pick out the letters of the alphabet, although nearly sixteen years of age. In conjunction with this subject the writer desires to add that children may fall from great heights, and if not killed outright, may rapidly recover. This too, depends upon the nervous organization of the child. For example, the writer saw at one time two children who fell from the third story of a tenement house to the street below. In one case the child's fall was broken by catching a clothes-line which broke the force of the fall. This child recovered rapidly. In the other case the child also fell to the pavement from the third floor and struck upon the head and produced an indented fracture upon the side of the parietal bone. The indentation was very marked and the depressed bone caused cerebral compression to such an extent as to produce hemiplegia of the opposite side of the body. The writer had the child taken to the operating room, and while in deep coma and hemiplegic, the sides of the head were manipulated so as to cause a bulging out of the elastic bones of the skull, causing the indentation to disappear immediately, and consciousness returned at once, and the hemiplegia relieved instantly. This case, which was seen by the writer with Dr. Archer, is unique in surgery, and illustrates to what degree a child may be injured and at once be relieved without any unfavorable symptoms.

The subject of contusion and laceration of the brain, does not concern us in this discussion beyond the fact that they are the causes of intracranial tension. Following concussion about which brief mention is made, contusion is a condition that requires a passing comment. Contusion is present in almost every head injury, in a greater or less degree. Phelps describes the anatomical conditions as follows, "A distention of the parenchymatous vessels, a general formation of minute thrombi, the presence of punctate extravasations, and a more or less distinct edema. The minute thrombi are the most characteristic of the several morbid conditions which have been enumerated. The edema, which is variable in amount, sometimes appreciable only after some delay and a close inspection upon section, and at other times so profuse that the fluid can be squeezed from the brain by the hand as from a sponge, is notably frequent. All these abnormal conditions, the extravasations, thrombi, and edema are simply measures of the general hyperemia which immediately preceded death." Laceration is a condition that has an important etiological relation to intracranial tension. The term itself expresses the nature of the trauma. The hemorrhages are generally so profuse as to completely disorganize the brain tissue. Laceration of the brain can cause death. Contusion on the other hand, is not of sufficient violence as a rule to cause death primarily; but in a fatal case of contusion, death is due to secondary inflammatory changes which have to do with intracranial tension, among which edema is a most important etiological factor in causing death.

By cerebral compression is meant the application of any force acting from without upon the brain in part or in whole. These forces may appear in the form of blood, bone, pus, or foreign body. These forces act as external agents to compress the brain and cause phenomena comparable to the group of symptoms designated by the stereotyped term of compression .

By cerebral compression on the other hand is meant the application of any force acting from within upon the brain. This force causes the brain to impinge against the bony walls of the cranial cavity. This condition of cerebral pressure is seen in the traumatic hydrocephalus, in diffuse meningitis, or in surface blood effusion in the subdural space and in cerebral edema. In cerebral pressure the intracranial tension is equally felt in the cranial cavity, as well also as in the general nervous system.

The next case that is brought here to be shown, is the one of cerebral pressure due to internal hydrocephalus. This child is blind, deaf and dumb. Lumbar puncture has been performed several times; but with no evidences of relief from the intracranial tension. It may be that this is explained because either too few lumbar punctures have been made, or that the foramen is closed and the withdrawal of the cerebrospinal fluid does not come from the ventricles. This case the writer believes is one for trephining, in order to relieve the intracranial tension which causes such distressing pain from which the child suffers. The evidences of pain are constant crying and screaming until under the influence of an hypnotic, the striking of the head violently with both fists, and the knocking of the skull against the side of the bed. Trephining will not cure this patient; but it will relieve the agonizing pain from which the child suffers. If two openings are made, the dura ought to puff through the trephine holes, and this may relieve enough tension to diminish the sufferings of the child, and if this does not succeed, aspiration of the ventricles may be performed through these openings, and the cerebrospinal fluid drawn off in quantities sufficient to relieve the tension. Increased blood pressure both in cerebral compression and cerebral pressure, nourishes the respiratory centers, and Cushing has shown that as long as the vasomotor system maintains the blood pressure higher than the intracranial tension, so as to keep the respiratory center nourished, respiration will continue. If now the vasomotor system fails, this same blood-pressure falls below the intracranial tension, which results in loss of nutrition to the respiratory center, and the patient succumbs with a low blood-pressure and rapid heart's action. If now artificial respiration is carried on, the patient may live for hours and then die. Perhaps the best way to clearly define the difference between cerebral compression and cerebral pressure, both of which are associated with intracranial tension, is to briefly report and exhibit cases of each, and emphasize the clinical differences, and note the symptoms which call for operative interference in each case. Recently the writer has had several cases under treatment, some illustrating cerebral compression and others cerebral pressure.

The patient that is next to be shown, is one that illustrates tne phenomena connected with cerebral compression. This patient, who was admitted to Bellevue Hospital, was first seen by my colleague, Dr. Gwyer. The patient sustained a compound fracture of the skull, with several wounds in the lateral sinus. The hemorrhage was alarming and controlled by packing with sterile gauze through the opening upon the fractured skull. The compression made by the gauze produced a paraplegia. The loss of motion was complete, and Babinski's sign of hyperextension of the great toe was well marked. The loss of sensation was not as complete as the loss of motion. During the following week the gauze was removed by the writer, little by little each day, and upon the entire removal of the gauze, which relieved the compression of the brain, the paralysis disappeared. The explanation of the paraplegia was compression over the motor centers of the lower extremity. The packing made compression upon the upper third of the anterior and posterior central convolutions, but ended so abruptly upon each side of the median line, that neither the upper extremities, nor the face became affected. To Dr. Camac and his assistant, Dr. Hastings, of the department of clinical microscopy in Cornell University Medical College, the writer is indebted for some interesting, and in many respects unique observations in regard to blood pressure and blood count in these cases of cerebral compression and cerebral pressure. The arterial pressure in this case of cerebral compression was 162 mm. of Hg in right radial and 155 mm. Hg in the left radial. Some packing was removed on the following day, and the right radial showed 150 mm. of Hg in the right radial, and 145 mm. of Hg in the left radial. These observations were taken while the writer was dressing the case upon the operating table and removing the gauze which caused the pressure. When the gauze was removed, the movements in the legs were increased to such an extent that he could flex the entire limbs upon the pelvis.

Pressure was made by the flat surface of a scalpel over the motor areas in the opening of the skull, and it caused a change at once in the arterial pressure as was recorded by the Oliver hemadynamometer. After the removal of the gauze pack, the patient's mental condition became normal. The writer attributes the fact that the arterial pressure did not entirely drop to normal to a slight edema over the site of the injury, which in a few days disappeared. In marked contrast to the case illustrating cerebral compression, which the writer saw in consultation with Dr. O'Connell, a case illustrating cerebral pressure. This child fell three stories, and struck upon her head. Apparently there was no fracture, and no external wound of the scalp; but the child was in the deepest coma from which it could not be aroused. The child had relatively a slow pulse of increased arterial pressure, a Cheyne-Stokes respiration, and slight convulsive movements of the body. The vasomotor paralysis did not entirely fail in this child's medulla, but it would have without a doubt in a short time, had not relief been afforded by surgical intervention. The deep coma with increased arterial pressure suggested surgical interference. The uninjured scalp was incised by the writer, a linear fracture was found, the edges of which had separated, and through the cleft blood and cerebral substance flowed.

This child remained unconscious for over a week. The temperature fell at once to nearly normal, and remained so for several days, when it rose gradually to 104° F. and then fell during convalescence. Her pulse also came down from 130, its highest point, to normal. The respirations from 40, at the time of the accident, to normal. The facial nerve was slightly inactive, the pupils were dilated, and reacted sluggishly to light. Blindness was present for several weeks during the period of encephalitis. The lower and upper extremities were weak, but with no evidence of rigidity. The knee-jerks were present on both sides as well as the abdominal reflexes. The tactile sensation was not much disturbed after the child became conscious. During the week of unconsciousness the child was fed by rectal enemata.

After many weeks the child was allowed to walk and its gait swayed, and the feet shuffled. Some months subsequent to the injury, the patient was examined by Dr. Fränkel, who reports the mental condition bright, no impairment in memory, the skull nowhere tender on percussion, no abnormalities of gait, no evidence of motor disturbance, or incoordination, no disturbances of the plantar or patellar reflexes, in fact the child was apparently normal. In other words, the child from a condition of deep coma lasting one week, cerebral irritation, prolonged encephalitis, absolute blindness for several weeks, disturbances of motion and other nervous phenomena, recovered in consequence of bold operative interference, for the relief of intracranial tension to such an extent, that a thorough neurological examination could detect hardly any deviation from the normal standard. Operation for the relief of intracranial pressure with no external injury of the scalp, was performed in this case, and at once relieved the dangerous symptoms and the operation effected a permanent cure, in a case that seemed for weeks, absolutely fatal. This little patient, as is evident to all here, is perfectly well, and the writer desires to acknowledge his thanks to Dr. O'Connell for his kindness in bringing this child to the meeting this evening.

In marked contrast to this case is another, recently observed by the writer, in which intracranial tension was present; but not to a degree sufficient to cause profound coma. The case illustrates the presence of intracranial tension, in which operation was not indicated, although for many days that fact was not certain. A study of this case offers a fitting opportunity to differentiate between those cases of intracranial tension, in which operation is not indicated, and those in which it is indicated.

The case which will now be presented is one that illustrates cerebral pressure, like the one just recorded, but unlike it in the important clinical fact that operation for intracranial tension was not indicated. By bringing these two cases together, both of which are associated with intracranial tension, the one calling for operative interference, and the other not, a clear clinical picture is presented which is most suggestive. In this case, illustrating cerebral pressure, the clinical history is unique from many points of view. The patients were suffering from intracranial tension, one from cerebral compression, and the other from cerebral pressure, and the opportunity to compare the two conditions both during and after the accident, was a most extraordinary incident. This case which is to illustrate cerebral pressure, was admitted to the hospital suffering from hematemesis. The writer examined the patient shortly after his admittance, and was struck by the absence of all symptoms indicative of a serious stomach lesion. The patient was not in collapse, had a fairly good pulse, and his general condition led the writer to believe that some other injury had occurred, other than rupture of the stomach, or the tearing of some large vessel in the viscus. The writer examined the ear and found deafness upon the right side. The patient complained also of a certain fulness in the head, especially marked at the base of the skull but who was perfectly conscious and free from any shock. He stated that he had never experienced any impairment in hearing and that the loss of audition was the result of his accident. Upon further inquiry the patient said he felt a sense of fulness in his head, and that he was dizzy if he raised his head, or moved it suddenly. The writer, with this data, made the diagnosis of fracture of the posterior or middle fossa of the base of the skull, accompanied by a mild degree of intracranial tension. Upon the third day a well-marked ecchymosis appeared behind the mastoid process which made the diagnosis positive. The patient's condition from the time of the accident grew gradually worse, and a still more thorough examination was instituted. The hematemesis was explained by the blood escaping through the fractured fissure in the posterior fossa, and along a fissure which extends into the middle fossa and into the middle ear and down the Eustachian tube into the stomach. There was no blood and no cerebrospinal fluid coming from the external auditory meatus. This was explained by the absence of any injury to the membrana tympani. The eyes were next examined by Dr. Duane, who reports two days following the injury, that the disc was somewhat swollen and the outline slightly indistinct and somewhat hyperemic with no tortuosity of the veins, and no pulsation of the arteries, and with no distinct optic neuritis. The ocular excursions were normal, showing no paralysis of the muscles of the eyes. Two days later the discs were swollen and the veins engorged and tortuous in both eyes. Optic neuritis was now present in both eyes opposite to the fracture in the base and which was explained by the decussation of the fibers. The examination of the blood two days following the accident by Dr. Hastings showed red blood cells 6,488,000, white blood cells, 15,000, polynuclear cells, 72.8 per cent., lymphocytes, 19.2, large mononuclear 6.4, eosinophiles 0.8, hemoglobin, 90 per cent.

Two days later, red blood cells 5,900,000, white blood cells 16,000, polynuclear cells 72 per cent., lymphocytes, 17.6 per cent., large mononuclear 10 per cent., eosinophiles 0, hemoglobin 90 to 100 per cent. Two days later, red blood cells 5,916,000, white blood cells 12,400, polynuclear cells 66 per cent., lymphocytes 22 per cent., large mononuclear 10.8 per cent., eosinphiles 0.8, hemoglobin 90 per cent. One week later, red blood cells 5,024,000, white blood cells 10,000, polynuclear cells 70.5 per cent., lymphocyte cells 19 per cent., large mononuclear cells 9.5 per cent., eosinophiles 1, hemoglobin 90 per cent.

The examination of the blood-pressure two days after the accident by Dr. Hastings showed with the use of Oliver's hemadynamometer that in the right radial it was 115 (mm. Hg), while in the left radial it was 135 (mm. Hg). Two controls were taken in order to verify the above examination. Two days later the right radial was 130 (mm. Hg) and the left radial 125 (mm. Hg) controls were also taken to verify these observations.

Two days later the right radial was 127.5 (mm. Hg) and the left radial 130 (mm. Hg). One week later the blood pressure was in the right radial 125 (mm. Hg) and in the left radial 127.5 (mm. Hg). From now on the blood-pressure fell. The urinary analysis two days after the accident was unimportant. Color, amber; reaction, alkaline; sp. gr., 1.020; albumin, negative; sugar, negative; microscopical, negative; urea, eight grains to the ounce. Two days there was but little change except the urea showed 10½ grains to the ounce.

It was thus evident that after the fourth day a general improvement occurred in the optic neuritis, in the slight fall of the blood-pressure, in the limitation of the number of the red cells, in the leucocytosis and in the change of the blood cells and in the urinary analysis. The neurological examination made by Dr. Fränkel on Nov. 1, 1902, showed a very marked dulness on the right side of the head on percussion, also very marked tenderness on the right side over the mastoid process. Pain was not elicited on deep pressure but on light percussion. This region so tender to percussion showed no external hyperesthesia. The sense of smell was apparently undisturbed. Both upper lids were somewhat lowered, and the pupils circular in outline, were equal in width. The pupils responded promptly to light. The ocular excursions were free and the lateral movements were slight, and nystagmus to a certain degree was present. There was no defect in either the motor or sensory portion of the fifth nerve. When the face is in absolute repose the right angle of the mouth droops, and when painful stimulation (pin) is applied to the skin of the right side of the face, reaction is marked. Active stimulation of the facial nerve shows a slight deficiency in all the branches upon the left side, but is most marked lower down. There was impaired bone conduction on the right side, while mechanical irritation upon the left of the face showed a vermiform reaction. The soft palate moves freely and is drawn up on the left side and the sense of taste was present upon the anterior one third of the tongue. There was no evidence of any disturbance of the eleventh cranial nerve, the tongue was freely movable and there was no evidence of paresis. Active excursions of both extremities were equally present. On exhibition of motional reflexes, the left side of the face was inactive. There was no disturbance of coordination in the upper extremity. Abdominal reflexes were present, the left was more active than the right, Plantar reflexes were diminished, spasticity in the lower extremities was not present, and the knee- and ankle-joints were normal. The amount of intracranial pressure varies of course with the character of the injury. The tension is often very great as was illustrated in a case in which the writer trephined the skull where there was no injury of the scalp, and where there was fracture of the bone.

The operation was performed on account of traumatic hemorrhage in the brain. The intracranial tension was so great that the clot, which was about the size of an English walnut, escaped from the lateral ventricle through the track made in the cortex and through the slit in the dura mater, and through the trephine hole, and shot into the air some feet above the operating table. The force with which this clot was fired into the air, shows how great the intracranial tension is in these cases of hemorrhage. The selection of the site upon the skull, over which the trephine was placed, was determined by a monobrachial paralysis, which was present, and appeared very shortly after the head trauma. As the localizing symptoms were unmistakable as to the situation of the hemorrhage, the writer trephined over the center for the arm, and removed the clot from the lateral ventricle. This is the first and only case as far as the writer can find, in which a cerebral clot in the ventricle has been removed in which no injury of the scalp or bone was present.

This case is unique in many respects. It illustrates the accuracy of cerebral localization, the projectile force of intracranial tension in hemorrhage, the value of operative interference in cases heretofore relegated to the treatment of expectancy.

Intracranial hemorrhage is one of the most frequent causes of intracranial pressure. It may also be caused by bone, pus, and foreign body. In order to clearly understand the theory of intracranial pressure, it is necessary to bear in mind two facts; first, that the brain itself is incompressible, and second that the cranial cavity itself is incapable of expansion, therefore, the pressure of a clot of blood or a fragment of bone, or a collection of pus, or any foreign body must be accommodated in the limited space in which the brain is lodged. If the foreign body is of sufficient size to fill the intracranial space by one twelfth, death results. Leyden has stated that intracranial pressure must equal the blood pressure to produce death. Now, while the skull cavity is a space incapable of expansion, and the brain is incapable of compressibility, these foreign bodies just referred to must find room at the expense of the fluids contained in the arterial, venous, capillary and lymphatic channels. In other words, the foreign body must cause a collapse or obliteration of the vessels, because the cerebral tension equals that of the vessels which supply nutriment to the brain. This obliteration of the vessels causes stasis. This stasis now causes an increase of blood-pressure in the parts adjacent to the obliterated vessels. The increased tension is felt in the veins and the capillaries of the adjacent area, and causes higher blood-pressure which produces a transudation for the reason that the plasma passes more readily into the brain tissue than the blood does through the obliterated veins and capillaries and cerebral anemia is established. Cannon has shown in his valuable experiments that anemia of the affected area alone is not the only factor in the production of intracranial pressure, but that the intracranial pressure, the result of traumatism furnished another factor, viz., increased osmotic pressure in the brain itself, causing it to take up water from the transuded plasma as explained by Hill. In other words that a force was operating in the brain substance that was greater than blood pressure and explained the cerebral pressure symptoms.

Cannon has shown that following head injuries there will be found near the lesion, venous stasis, while distant from the lesion acute anemia so that a limited area is present in which blood supply is cut off and, in consequence of the loss of nutrition by blood, oxygen is absent. Loeb has shown that the gastrocnemius of a frog's leg, which was deprived of oxygen by cutting off the blood-supply for one week, showed an increase in weight of from 25 to 40 per cent. In other words, Loeb demonstrated that the deprivation of oxygen showed that "the active agent in the production of swelling is osmotic pressure."

If now, as Cannon has pointed out, in cerebral trauma there is stasis and acute anemia and loss of oxygen, in any given area these conditions produce an increase in osmotic pressure and swelling from edema follows, which causes the intracranial pressure. Loeb placed a brain in a two-per-cent. solution of sodium chloride and found that it increased in weight, and so a brain by osmotic action of the serum around a given lesion causes it to swell and thus intracranial tension is produced. This same process spreads and soon edema is sufficient to cause death since the brain is incompressible, and the skull inelastic, and it is only a question of the degree of intracranial tension to produce a fatal termination.

The writer has studied clinically these cases of intracranial tension along the lines suggested by Cannon and Cushing, to both of whom the writer acknowledges his indebtedness for the valuable deductions drawn from their experimental work upon lower animals, and which experiments have been guides to the writer in his study of the clinical phenomena connected with intracranial pressure occurring in men.

To be sure, cases of intracranial tension have occurred in which unconsciousness, vomiting, hemiplegia, loss of rectal and vesical control have been present, and the patients recovered. On the other hand cases of intracranial tension have occurred in which the autopsy showed that there was no epidural, pial or cortical hemorrhage, and only a few areas of softening. In other words the slightest laceration may cause death. Bullard believes that in such cases edema which is secondary to the lesion is the cause of death. He explains the fatal issue by the fact that the brain acts like a sponge and impinges so hard against the bony walls forming the skull as to arrest the pulsation of the dura mater. Trephining of the skull and incision of the tense dura relieves immediately the intracranial tension, and this operation saves the life of the patient. In these early operations the tension is relieved and fatal edema does not follow. In all of these cases death will not occur until intracranial pressure equals arterial pressure. When this takes place the vessels in the brain undergo stasis which in turn deprives the medulla of blood and death ensues.

The treatment of intracranial tension is a new subject and one to which the writer has given of late special study. He is convinced that operative treatment is indicated in many of these cases and has employed this measure with most gratifying success. The indications for operative interference are in some cases perfectly clear while in others the phenomena present would not justify so severe a measure. The greatest difficulty the writer has found is to determine what the line of demarcation is between the cases that demand trephining or lumbar puncture and those in which the plan of expectancy can be adopted. The writer is convinced from an extensive experience in head injuries that deep coma calls for operation at once. He is in doubt in the absence of deep coma as to the expediency of operative interference in less severe cases of intracranial tension. Reference is now made to those cases of intracranial tension in which there is an absence of a compound fracture of the skull, or any apparent injury of the scalp. The indications for operations are clear when there is a fracture of the skull, since in these cases operative interference is called for owing to the local injury. It is in those cases of intracranial tension with no external injury that difficulty arises in the mind of the writer who has formulated according to his experience, the line of procedure in the operative treatment of intracranial tension in the absence of a compound or depressed fracture.

These cases of intracranial tension can be divided into two classes for the purpose of study as regards operative interference. The first class includes those cases in which intracranial tension is sufficient to produce profound coma. The second class includes those cases in which the intracranial tension is not sufficient to produce profound coma. Operation will save cases included in the first class that uniformly died under the expectant plan of treatment. Operation will save the cases embraced in the second class when the symptoms are gradually increased in severity.

In regard to the indications for operation to relieve intracranial tension in those cases included in the second class in whch coma is not present, the problem is difficult of solution. The writer has been guided as to the operation by the condition of the patient after a study of the symptoms from hour to hour and from day to day. If the arterial pressure rises to a point and remains stationary, and the vasomotor system does not fail, even with a well-pronounced vagi disturbance, no operative procedure was practised, and recovery has taken place. In addition to the symptom of increase of arterial pressure the blood count must be studied, the eye grounds examined, the urine tested, the reflexes studied, the disturbances of the cranial nerves noted, and all other phenomena investigated. If the pressure is not daily increasing and the leucocytosis not rising, the red blood cells not increasing, and the urine not becoming glycosuric, the hebetude not emerging into coma, and the cephalalgia not increasing, delay in operative interference is indicated.

If all the above-mentioned symptoms from a stationary point begin to increase, operative interference is called for to save the patient's life. If on the other hand, from this stationary point all the symptoms show an improvement, operation can be deferred, at least for the present, if not permanently.

Abolition of the Coroner's Office.—It was voted in the Senate at Albany on Tuesday last to pass the bill of Senator Elsberg that abolished the Coroner's Office in New York city. The Assembly concurring, this will become a law, and a number of new medical positions will be at the disposal of Health Commissioner Lederle.

A PRELIMINARY REPORT ON THE VENOUS HUM IN RELATION TO THE STATE OF THE BLOOD.

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VISITING PHYSICIAN TO CITY HOSPITAL: CHIEF OF MEDICAL CLINIC, CORNELL UNIVERSITY MEDICAL SCHOOL.

IN the course of our systematic observation of cases in the Cornell Medical Dispensary the occurrence of a bruit in the vessels of the neck together with the normal blood attracted our attention. My impression, and I think that of most clinicians, was that the bruit was an associate of anemia, and that its presence might be taken to indicate an anemia. Our rule in the Medical Dispensary is to send all suspected cases of anemia to the Clinical Laboratory (which is a working part of the dispensary) for blood examinations.

Normal blood was frequently found in cases of marked pallor, so that the word "anemia" in our histories has been limited to those cases only where there were blood changes. Thus a group of cases developed which presented some of the clinical features of anemia, but which had not the blood changes common in that condition. While pallor might not lead many observers into the error of assuming anemia, the bruit in the neck might, and it was with the purpose of informing ourselves on this point that the cases here presented were gotten together. We have only a few of these cases showing cervical bruit with normal blood, but I am disposed to think that many have escaped us, because ausculting the vessels of the neck is by no means a routine procedure, and were there nothing else to suggest a possible anemia both this and the blood examination would be omitted. In studying these cases information was sought from the authoritative text-books. Extracts from a few of which I quote:

An exhaustive study of the literature bearing upon this has by no means been made. The extracts which I have made are the following: In describing the cervical bruit Musser (Medical Diagnosis, p. 337-8) says: "If one listens with the stethoscope over a large superficial vessel, and *does not employ pressure,* he will not detect any sound. If, however, pressure is employed, a sound or murmur is produced. The passage of the blood through the vessel produces no sound because the vessel or the tube is of equal caliber. The pressure of the stethoscope alters the caliber and compels the fluid to pass through a narrow orifice into a wider space. In this manner a fluid vein is produced. The vibration of the molecules of the agitated fluid vein produces a sound or murmur. The loudness of the sound depends upon the swiftness of the flow."

Functional Murmurs Not Anemic.—Drummond (p. 386) divides functional murmurs into three classes: cardiohemic or anemic; cardiomuscular or neurotyptic, and cardiorespiratory; and Osler says (Practice of Medicine, p. 794): "On the right side of the neck over the jugular vein a continuous murmur is heard, the bruit de diable, or humming-top murmur."

In explaining this bruit, Stengel says (Twentieth Century Practice of Medicine, p. 346): "This venous hum is more frequently heard upon the right side than upon the left, but in most cases, when present, is heard on both sides."

In a study of 180 cases of typical chlorosis Richardson has found a venous murmur in about one-half of the cases in which the hemoglobin was below 50 per cent. More accurately, there was no bruit in 49.4 per cent., a right-sided murmur in 33.3 per cent., a left-sided murmur in 6.1 per cent., and a murmur on both sides in 11.1 per cent. Other observers—and my own experience coincides with this—have found the venous bruit more frequent.

Allbutt in his System of Medicine, p. 502, says: "It is not difficult to suggest an explanation of the hum; that which is generally given, and which on the face of it seems most probable, is that the vibration of the walls of the vein is due to a *change in the caliber of the tube at the root of the neck.* The lower portion of the vein is of constant or almost constant caliber; this constancy being secured by the adhesion of the coats to the cervical fascia. Now if by any means, such as a smaller stream of blood, the vessel be narrowed above, there is a run of the blood from a narrower to a wider channel, this change in the continents sets up fluid veins in the contained blood, and the walls of the vessel are thrown into vibration thereby."

Still, although the explanation is rational in itself, yet we may ask why it occurs in some anemias and not in others? Again, why is it—as I think it is—incomparably more frequent in chlorosis than in other anemias? In my experience it is not usual to get the venous hum in plumbism, in malaria, in cancer and so forth; it may be there, but it is not to be foretold, while in chlorosis it is a fairly safe prophesy to foretell its presence.

Yet, if it be true that in chlorosis the vessels are not empty as they are in some other anemias, surely it is in chlorosis that the hum should be less commonly heard. *Perhaps the tone of the vessels enters into the causation.* Moreover, there is an old hypothesis that the hum is due to the "thinness of the blood," the corpuscular contents of which as we know are notably reduced; this hypothesis has never received much countenance from competent judges; but Potain has brought it forward again on the basis of experiment. Potain so arranges a tube in connection with a reservoir that at one time serum should run down the tube, at another defibrinated blood containing the normal number of red corpuscles; on the use of the stethoscope the murmur was heard to fall in intensity when corpuscular blood replaced the serum. Whether this observation has been verified by other observers I do not know; if so, it has an important bearing on the generation of the bruit de diable. The hum, as I have hinted, is to be heard less certainly and loudly in other veins, in other of the anemias, *and even in some healthy persons.*

From the two latter quotations we get the following points: (1) Anemia may exist without a cervical bruit being present—33 to 50 per cent.; (2) bruit occurs in some anemias and not in others; (3) the bruit is more frequent in chlorosis than in other anemias; (4) the bruit may occur in healthy persons; (5) the most probable cause is variation in the caliber of the blood vessels; (6) perhaps the tone of vessels enters into the causation.

From this the following deduction may be made: From the first and second; if the anemia occurs without the bruit, the bruit is, therefore, not necessarily dependent upon anemia for its production. From the third—that if it is more frequent in chlorosis than in any other anemia there must be some condition in chlorosis which is not so frequent in other anemias.

May not this be the instability of the vasomotors? We know that chlorosis occurs most frequently in women and at the age of puberty; both the sex and time of life in which the vasomotor mechanism is most unstable.

From the fourth—that it occurs in healthy persons, that it is not an invariable sign of anemia, and that it is not dependent upon change in the blood for its production. In support of the view that the bruit is not dependent upon blood changes, the bruit heard in the neck in Basedow's disease may be cited as an example.

Apetz in a most thorough study of 600 cases (*Arch. f. path. Anatomie i. Physiol.*, Vol. CVII) comes to the conclusion that only the intense bruit heard in individuals standing, sitting and holding the head straight is to be considered as a genuine bruit. The bruit in individuals between twenty and forty years of age, if steady, has a pathological significance, but under any circumstance it has no great diagnostic value in anemia. The article is full of valuable observations.

Dr. Bewley's report in the *Medical Press and Circular,* 1891, pp. 377-378, is, while interesting, quite inadequate—as he determines the anemia by the appearance of the mucous membranes, etc., an index quite unreliable, as pointed out by Richardson (*Lancet,* Vol. I, 1891) and amply proven unreliable in our experience.

Richardson's (*loc. cit.*) tables are well worth consulting on this subject.

The cases which I report are divided into four groups: (1) Cervical bruit present, hemoglobin 90 per cent.; (2) cervical bruit present, hemoglobin between 75 and 90 per cent.; (3) cervical bruit present, hemoglobin below 75 per cent.; (4) no cervical bruit present, hemoglobin below 75 per cent.

I have considered the cervical murmurs under two heads: (1) The true venous hum which is quite characteristic; (2) a soft systolic. There is also the (3) rough systolic due to sclerotic changes in the arteries, and the (4) diastolic murmur of aortic insufficiency.

The last two must not be confused with the

REPORT OF CASES.

	CASE	AGE	SEX	OCCUPATION	CONDITION	NATIVITY	COMPLICATION	C. SKIN	LUNGS	HE
I	1. 4540	19	Female	Veilmaker	Single	Russian	Headache	Pale	Negative	Normal si murs
I	2. Nov. 8	40	Female	Housework	Married	Russian	Pain in right side	Pale and splotchy	Negative	Negative
I	3. July 8 Private	24	Female	Housework	Married	Austrian	Dizziness and dull pain	Fairly good	Negative	Negative
I	4. Oct. 30, 1901	36	Female	Housework	Married	Russian	Pain in abdomen	Pale	Negative	After exe systolic heart
II	5. May 20, 1901 Private	20	Female	Maid	Single	German	Headache	Pale	Negative	Presystoli at apex o thrill
I	6. Nov. 8, 1902 Private	24	Female	Housework	Single	U. S. A.	Headache; amenorrhea	Pale	Negative	Harsh so left bord
I	7. Nov. 10, 1900 Private	14	Female	Schoolgirl	Single	U. S. A.	Nosebleed, headache and establishing menses	Pale	Negative	Negative
I and II	8. 2744	27	Female	Housework	Married	Austrian	Stomach trouble	Pale	Negative	Negative
III	9. 925	60	Female	Seamstress	Widow	U. S. A.	Cough	Very pale	Negative	Slight sys at apex
I and III	10. 2671	29	Female	Housework	Married	U. S. A.	Dizziness; headache	Pale	Negative	Negative
I	11. 4295	20	Female	Housework	Married	German	Headache	Pale	Negative	Negative
III	12. 3526	21	Female	Fruit packer	Single	U. S. A.	Cessation menses	Moderately pale	Negative	Negative
I II and III	13. 2772	20	Female	Housework	Single	Irish	Swelling of feet	Pale	Negative	Negative
III	14. 2707	21	Female	Domestic	Single	U. S. A.	Noise in right ear	Pale	Negative	Systolic over ste thrill
III	15. 2646	20	Female	Domestic	Single	Irish	Heart trouble and indigestion	Good	Negative	Loud sys mur at transmitt
I	16. 4344	23	Female	Housework	Single	U. S. A.	Pain in stomach after eating	Pale	Negative	No murm
I and IV	17. 2344	20	Female	Salesgirl	Single	U. S. A.	Cough	Pale	Negative	Soft systo heard up of sternu
IV	18. 1240	14	Female	Schoolgirl	Single	U. S. A.	Epigastric distress	Fairly good	Negative	Negative
II	19. 755	22	Female	Housewoth	Married	West Indies	Headache	Dark	Negative	Tumultuo ular; no
II	20. 200	23	Female	Cigar overseer	Single	U. S. A.	Loss of appetite	Pale	Negative	Negative
I	21. Private Nov. 15th	35	Female	Masseuse	Single	Irish	Headaches	Pale	Negative	Negative
I	22. Private	25 ?	Female	Housework	Single	U. S. A.	Headaches	Pale	Negative	Negative
	Summary	14 to 20— 8 21 to 30—10 31 to 40— 3 41 — 1	All Females		Single—13 Married—8 Widow—1		Menstrual—1 Headache—8 Loss appetite—1 Abdominal pain—5 Cough—2 Dizziness—2 Heart trouble—1 Tinnitus—1 Swelling feet—1	Pale—18 Good or fairly good—4	All Negative	Negative- Bruits—7 Tumultuo

REPORT OF CASES.

RUITS	KIDNEYS	OTHER VISCERA	LACING	D. VENULES, VAR. VEINS OR EDEMA	BLOOD	VESSELS
heart and on	Not palpable	Liver normal; abdomen relaxed	Has probably laced too tightly, as she is now unable to wear corsets without distress	D. venules present	Hemoglobin V. F. 100 to 105 per cent.	Not noted
ht side of neck	Not palpable	Abdomen relaxed; liver slightly enlarged	Indefinite	Slight varicosity	Hemoglobin V. F. 90 to 95 per cent.	Moderately thick
ring bruits on of neck	Right kidney distinctly palpable	Liver slightly below costal margin; relaxed	Constantly laces tightly	Numerous in thighs	Hemoglobin V. F. 90 to 95 per cent.	Soft
n right side of constant; dis- o or three beats o or three beats	Not palpable	Abdomen pendulous; relaxed	Does not seem to lace tightly	D. venules present in thighs	Hemoglobin V. F. 90 per cent.	Soft
ht side of neck	Not palpable	Tenderness over the liver; relaxed	Does not lace tightly	D. venules present	Hemoglobin V. F. 85 per cent.	Soft
right side; oc- humming	Not palpable	Abdomen relaxed	No tight lacing	D- venules present	Hemoglobin V. F. 90 to 95 per cent.	Soft
ght side of neck	Not palpable	Negative	No tight lacing	D. venules absent	Hemoglobin V. F. 90 per cent.	Soft
t side of neck; t	Not palpable	Negative	?	D. venules absent	April 5. Talq. 70 to 80 per cent.; Nov. 8, 90 to 95 per cent. Talq. V. F.	Moderately soft
both sides of e up sternum	Not palpable	Negative	No tight lacing	D. venules absent	Hemoglobin V. F. 35 to 40 per cent. Talq. 1,276,000	Secondary anemia
t to right of	?	Negative	?	D. venules absent	Mar. 25. 90 per cent. Hemoglobin; Nov. 10, is pregnant; hemoglobin, 60 to 70 per cent.	Soft
, not constant	Not palpable	Negative	Moderately tight	?	95 per cent. Talq.	Soft
in right vessels nd over stern-	Not palpable	Negative	Does not lace tightly	D. venules absent	Hemoglobin V. F. 70 per cent.; Talq. 60 per cent.	Soft
ide of neck dis- s distinct on	Negative	Negative	Does not lace tightly	?	Hemoglobin V. F. 70 per cent. Talq. 70 to 80 per cent.; Hemoglobin 80 to 90 per cent.	Not noted
it whirring at of neck; less left	?	?	?	?	Hemoglobin 35 to 40 per cent.; R. B. C. 4,760,000	Not noted
nd on right side o bruit	?	?	?	?	Hemoglobin 55 per cent.; R. B. C. 4,842,000	Soft
es of the neck left border of	Not palpable	Abdomen protruding like that of an old woman	Probably laces too tightly	Numerous over body	Hemoglobin 90 to 100 per cent.	Soft
right vessels on of neck; March ill present	Not palpable	?	?	?	Feb. 8. V. F. Hemoglobin 65 to 70, Talq. 50 per cent.; March 18, Hemoglobin 105 to 110 per cent.	?
neck	Negative	Negative	?	?	Hemoglobin V. F. 65 to 70 per cent. R.B.C. 5,000,000	?
oth sides	Negative	?	?	?	March 5. Hemoglobin 75 to 80 per cent. V. F.	?
ft side of neck; one; July 1, no ne 1, on right k	?	?	?	?	July 24. Hemoglobin 80 to 85 per cent. V. F.; Dec. 30, 85 to 90 per cent. V. F.; Nov. 15, Hemoglobin V.F. 90 per cent.; bruit still present on right.	?
uit right; less ft	Not palpable	Negative	?	Numerous D. venules; some v. veins	Hemoglobin 90 per cent. V. F.	Soft
ht, none to left	Negative	Negative	Does not wear corsets	Absent	Hemoglobin 90 per cent. V. F.	Soft
1	Negative—17 Palpable—1 Not examined—4	Negative—10 Relaxed—7 Not examined—5	No tight lacing—8 Information not obtainable—9 Tight lacing—4	D. venules: Present—3 Absent —8 V. veins: Present—2 Absent —? Edema: Present—? Absent —? Not exam.—9	Hemoglobin 90 per cent.—14 Hemoglobin 75 to 89 per cent.—2 Hemoglobin below 75 per cent.—6	

bruit under consideration. Only the soft systolic heard in anemic conditions can be classed with the true *bruit de diable*.

In conclusion, I may say that we had many more cases than those here reported, but the data were insufficient from which to draw inferences and these cases were therefore omitted. At first the impression was that we were possibly dealing with incipient chlorosis, that in the thorough examination of these walking cases we had observed the condition earlier than usual. This I think now is incorrect. The thought of a pseudochloris occurred as there were in many cases all the symptoms of chlorosis without the blood change. With the idea that general loss of arterial tone might be a cause for this bruit, I consulted our histories of cases of splanchnoptosis under which head we include all cases of floating or displaced kidney or other viscera. The cervical vessels were not examined in these cases, so that these histories were not available for our purposes. We will not attempt to explain this bruit without more thorough laboratory examination of the blood. The practical point to a clinician is that pallor and even a cervical bruit may not indicate anemia, that is blood impoverishment, and that the blood should be examined to determine this point. Moreover, the treatment would be influenced by the finding of a normal blood condition, and if the suggestion that the vascular tone is faulty be correct cardiovascular stimulants would be indicated and not the exclusive administration of iron. May not this be the condition of those cases of supposed anemia where strychnine in large doses and not iron does good. There are, of course, many interesting investigations suggested by this study, "such as the specific gravity of the blood," "the so-called hydremic state, arterial tension, etc.," but I have endeavored to present an observation which may be made by a practitioner with a stethoscope and a hemoglobinomoter, and from which helpful information for diagnosis and treatment may be had.

I wish to thank Dr. L. A. Conner for calling my attention to some of the references, and Dr. M .Schoenberg for his review of the German literature bearing on this subject.

SOME PHYSIOLOGICAL OBSERVATIONS ON A CRUSTACEAN HEART.*

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THERE is a field of animal experimentation which has been exceedingly little worked as yet, indeed practically not at all. The reference is to small and more or less transparent animals, small enough to be, perhaps, comprised within the field of a lens or of a microscope, and transparent enough so that some or even all of the internal mechanisms may be observed directly. Some interesting researches, to be sure, have been recently made into the locomotion of infusoria and of other orders, and many have worked to excellent advantage on the various *taxes* of numerous forms of small animals; numberless and very laborious studies have been carried out of course, on the anatomy, gross and histologic, of all known species of animals; and surely far-reaching experiments have been made recently concerning the regeneration of many simple forms. Still, none of these varieties of research more than borders on the field which is suggested here. Many of these small animals, not yet subject of true physiologic inquiry, have complex organizations, the larger forms of life in miniature almost, while in others one has for his observations and experiments a set of organs similar in general function to their congeners even in mammals, but oftentimes so simplified in their actual structure that they may be studied to much better advantage in many directions. Thus in these small forms (any systematic textbook of zoology will suggest their names and structures), very often one finds before him for experimentation an organ like the mammalian or reptilian organ in all essential respects, but often much more suited to use because relatively free of various complexities and difficulties which, in the mammal or the reptile even, complicate and hinder. The most basal functions are in the "lowest" and the simplest as perfectly performed as in the highest and most evolved—and it is these basal functions of life with which physiology chiefly is concerned. In simple, usually small, animals one sees the type, and so displayed as to be seen most easily. More and more continually does physiology seek in the cell what formerly the total organ or tissue was expected to reveal, but could not. To employ more often these minor animals is only a step in this same direction, for whether unicellular or merely relatively minute and highly organized (as, for example, the crustacea), the structure is comparatively simple and correspondingly close, in general terms, to the morphologic, and so to the physiologic, type. Besides this theoretic advantage of studying small animals, there are others of a practical nature which, like the disadvantages, need not be recounted. The laboratory which is equipped with a small Roentgen ray apparatus applicable to the stage of a microscope, has a field for research not confined to animals which are by chance covered with a transparent tegument. With such an instrument much might certainly be learned of permanent value to biology.

In the study of viscera in particular, the employment of animals small and transparent enough to be seen all at once and at a glance, has especial advantages, for only so can the functional relations of these be determined. Scarcely any condition of change is confined to one viscus or to one organ alone, and to know how other viscera are affected often gives hints else missed. For example, in studying the heart, one needs to know the relative condition of the circulation, the degree of the activity of the other viscera, the general vigor of the animal as indicated by the voluntary movements, and the excitement of the nervous system perhaps. The small Cladoceran branchiapod *Daphnia* is particularly well adapted for use in this direction, the animal, although encased in a shell, being completely transparent, neither so large that it cannot be observed all at once with a low-power objective, nor so small that its organs cannot be clearly made out in all their molar movements. This animal is to be had in ten minutes in thousands during the summer and autumn from almost every permanent pool, the Back Bay fens of Boston, for example, furnishing from an area of two square meters a supply of *Daphnia* ample for a winter's use, especially when it happens that successive generations appear in the aquarium. The animals are very hardy and live indefinitely in a vessel holding a few liters if they be supplied with a proper environment in the shape of decaying animal and vegetable matter, some few living water plants and in the absence of larger animals, *e.g.*, young fish, which devour them in multitudes. Several small glass vessels, as for instance the crystallization dishes of the chemist, make their preservation more certain than it would be were the animals all in one aquarium.

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*From the Laboratory of Physiology of the Tufts College Medical and Dental Schools.

The particular crustacean species employed for these observations was *Daphnia pulex* DeGeer, although other species of *Daphnia* seemed to present in much smaller numbers, all however being practically, that is for practical physiology, alike. This animal in its adult condition is very rarely over two millimeters in length includng the long antennæ extending anteriorly and the sharp considerable spine guarding the animal posteriorly. The animal is very thin laterally, rather broad dorso-ventrally, so that it lies easily and quiet on the microscope slide and gives a minimum of depth to the view. Hence in part the extreme transparency of the animal. It is one of the commonest of the smaller animals studied in the average elementary course in zoology.

The heart of this species is suitable for physiologic study for several reasons, some of which are obvious. All these represented may be readily made out with a one-third objective if properly focussed and lighted, despite the extreme transparency of the cardiac protoplasm. As one may readily see, this heart is morphologically almost the type of a pumping organ, for it consists almost wholly of two series of muscular cells arranged side by side on either aspect of the dorso-ventral plane in a manner to form an ovate saccule. These cells are almost typical smooth muscle cells of a blunted fusiform shape, and by their simultaneous shortening produce the systole of the viscus. The nuclei of these simple heart cells can be readily made out in the living animal under a low-power objective. Whether divided anatomically or not into two chambers, an auricle and a ventricle, is not to be made out directly, but occasionally there is physiological evidence that such is the case. From the side, the heart exhibits two openings one, conspicuous sometimes, near the center of the organ, through which, and its counterpart on the other side, the blood enters during the diastole, chiefly it is evident by aspiration; the other opening is in the anterior end of the heart in the median line, and through it the circulation passes. Each of these three openings is supplied with a simple but effective valve in the form of a delicate flap, to prevent regurgitation, that of the outlet of the organ, opening outward, being sometimes readily seen in action, but the others less often because they are within and usually observed broadside and not on edge like the anterior valve. The heart pulsates with apparently the utmost freedom in a considerable enlargement of the dorsal blood-sinus lying anterior to the brood-sac, the sinus being normally filled with the transparent and colorless blood. The only apparent attachment of the heart is on its ventral surface where a thick and movable membrane of cells anchors it to the substantial dorsal border of the alimentary canal. The blood comes to the cardiac sinus by well-defined channels on either side of the brood-sac, and soon after leaving the heart spreads well over the head to nourish the numerous organs there situated, thence collecting somewhat and passing into the trunk to be oxidized by the "lung-feet" in the ventral cavity. The histologist certainly has a chance to do useful work by tracing out the nerve-supply of some of these simple sorts of animals; thereby knowledge of their functions may the sooner follow.

Here, then, in *Daphnia* one has for study a heart wellnigh typical in its structure and relations, indeed, almost such a heart as an experimenting physiologue might wish to construct that he might thereby study in their simplicity the conditions underlying as general principles of action the vast complexities of the mammalian circulation. It is composed wholly, perhaps, of a layer or layers of smooth muscle cells joined by a stout ring of muscle in the median line. There are no complicating blood vessels, no intricacy of interrelated nerves to be unraveled or else guessed at, few or none, in short, of the conspicuous difficulties which arise from the high development of the mammalian blood-pump so easily deranged and killed. Its simplicity simplifies the problem somewhat. On the other hand, this organ is minute (rarely more than say 0.15 m.m. in length) and not subject therefore to the direct application of apparatus, canulæ, oncometers, etc. Again, the Cladoceran animal is a long way from the mammal and generalizations between the two correspondingly uncertain, although *Daphnia's* heart has plenty of interest in itself without thought of further reference. But what is of most importance perhaps, the biogen composing this heart is in its purest form, and freely exposed to the observation of the lens-aided eye; one can watch it beat, observe its shape changing under varying conditions, study its condition in collapse, in short, see it all through and compare it immediately with other organic events. In addition to the adult animal for study, one has in observing *Daphnia* very often an excellent opportunity to compare therewith the embryonic stages. In the brood-sac lying posterior to the heart one generally finds from two to five young animals, the very large majority of the specimens of this genus taken in any dredging or raised in the laboratory being females. By examining many individuals successively, within an hour one may see practically every stage of embryonic life and study it with the utmost facility, from the fertilized ovum in a late mulberry stage to almost the adult form. Before leaving the capacious brood-sac of the mother the heart, eye, gut, etc., have practically their adult form and may be readily observed even with a low-power objective. Thus, *e.g.*, one oftentimes may compare the pulse-rates of three or four embryos of one brood or the heart-rates of these with that of the mother. There too is an excellent place to study the segmentation of the ovum long before it reaches the brood-sac, and the daily development later, the tissues being so thoroughly transparent.

To note, then, certain conditions of the varied action of this protoplasm organized into a perfect heart, under a few simple but varied states is the object of this all too fragmentary report.

In these observations of *Daphnia* "Leitz" objectives Nos. 3 and 7 were used, with oculars 1 and 3. With an average-sized animal, objective 3 and ocular 3 gives a field just about filled, but with the combinations possible with these lenses practically all may be seen which is observable at all in the living unstained animal, the blood corpuscles, *e.g.*, being plainly visible with the combination of obj. 3 oc. 1, and not better with a 7-3. The tissues readily take up during life the common methylene blue stain, but the advantages of its use in so accessible an organ as the heart of *Daphnia* are doubtful. By lowering a 4 mm. glass tube closed by the finger at the top over or very near one of the animals gently jumping about usually near the bottom of the aquarium, the specimen was quickly secured when the finger is removed and the water fills the pipette. It was then put on a slide, most of the accompanying water turned off, leaving the little animal, very flat, lying on its side in a thin layer of water, all the organs fully exposed to view; a cover glass was never applied because oppressive to the specimen and moreover of no use in nearly every case. Thus the animal was observed in a condition absolutely normal, save that it lay on one side instead of jumping upright by means of its large and powerful antennæ in the water. (This jumping locomotion is quite characteristic of the genus and doubtless accounts for the common name of the animal which is "water-flea.") The whole general impression gained from a glance at *Daphnia* so placed on a slide under a low-power objective is one of extreme activity, for various visceral movements are conspicuous. The largest moving mass to be seen is that which apparently fills the ventral portion of the animal nearly the whole length of the alimentary canal; these organs are the lung feet, if one may call them so, continually moving for the purpose of respiration, and with a rate oftentimes synchronous with each other and with the heart. The alimentary canal, a prominent dull greenish-yellow tube extending through the animal exhibits movements usually more or less rhythmic in nature, the chief motion noticeable being a gentle surging back and forth of the nutritive material throughout the greater part of the canal, with the periodic pulsation of the c-shaped digestive gland, closed at one end, extending anteriorly from the gut. Dorsal and anterior to the prominent intestine beats rapidly the heart, in a capacious sort of compartment or sinus of its own. Posterior to the heart is situated the brood-sac and this in the female almost always contains two or more embryos which occasionally struggle violently as if to escape into the world, while, if they are old enough, visceral movements are taking place in them quite similar to those of the parent. At the extreme anterior end of the animal is the very prominent single eye, the only strictly opaque object in the body except the filled portions of the alimentary canal. This eye is in continual gentle oscillation, and the three muscles which move it (each made up apparently of a single nucleated muscle cell) are plainly visible. Occasionally the long and slender feather-like antennæ jerk in their characteristic way. At times the posterior end of the abdomen straightens out perhaps to void feces or to push away disturbing masses of vegetable matter which have floated against it. In a suitable light the blood's circulation is plainly visible by means of its large corpuscles, and is especially plain in the head in around the brain and its ophthalmic ganglion, about the eye, just under the shell in the posterior end of the animal, and along the dorsal sinuses if the brood-sac be not over-distended with ova or embryos. If one may judge by the rate through the sinuses, a corpuscle may make a complete circulation in from ten to twenty seconds. These are the most prominent of the gross phenomena obvious on a cursory look at the object under low-power, and combined they make a picture of organic activity of no little physiologic interest, especially to a student of visceral coordination under various conditions.

II.

The first series of observations as to *Daphnia's* heart was directed toward a determination of the pulse-rate. This has not only a certain interest in itself, but it served as a norm with which the rates in various other cardiac conditions might be compared. As the heart even of an adult specimen is not over 0.15 mm. in length and often in practical runs of specimens much less, to apply any sort of a sphygmograph to it was of course out of the question, especially since the body of this species, save the head, is enclosed in a tough chitinous shell, quite transparent but fairly strong, and not removable without tearing the animal into parts. But to determine the pulse-rate a simple method was at hand, not as exact in its details as would be the action of a true sphygmograph or plethysmograph, but productive of results invariable far within the organic variation. There was arranged a Morse key actuating an electric pen writing on a kymograph drum above a tracing marking seconds from a clock circuit-breaker. Having had considerable practice in imitating rhythms, it was an easy matter for the experimenter by observing the heart through the microscope to indicate by taps of the key its pulse-rate on the smoked paper,—a record which may be called an indirect sphygmogram, and accurate to any required degree except as regards cardiac events invisible to the eye but which an ordinary sphygmograph might record. The heart-rates of a large number of individuals were recorded in this way, all ages and sizes and both sexes being represented.

The rate varies among different specimens much more than in the higher orders of animals. Comparatively many have a rate slower than the average, and in a smaller number the heart beats much faster than normally it does. When these variations do occur it is noticeable that they are considerable, but individuals may be not rarely observed with rates half or two-thirds the average,—the variations are seemingly not more frequent than in higher developed species, but, when they do occur, much greater. The average pulse-rate of this species, at least in these conditions, may be put at 240 per minute. For embryos the rate progressively increased with their ages, but in general is much less than in adults, a half or a third that of the maternal heart near by. This is a matter of considerable theoretic interest, as being quite opposite to the relation obtaining in vertebrata orders of animals, the pulse-rate of a human fetus, *e.g.*, being double that of its mother instead of half that of its mother as in *Daphnia*. The former fact has been explained tentatively by the lack of development of the inhibitory cardiac nerves, an explanation open to discussion, with small expectation of proof one way or another. In the case of *Daphnia* there is excellent evidence that in the adult inhibitory nervous influences have much to do with the function of the heart, while all trace of augmentor nerves is lacking. It is clear then that the above suggested explanation cannot also apply to *Daphnia's* heart, for with a supposed similar neurology, the physiological effect is quite opposite. Such facts as this of the Cladoceran pulse-rate serve to illustrate well how complicated is the problem of inhibitory nervous influence in general.

This normal adult heart-rate of 240 is an average of many individuals, and individual differences seemed to be great as one viewed many hearts of specimens taken at random from the aquarium, although the large majority were very close to 240. A previous research* on crustacean individual differences failed to reveal, in the crayfish, anything like permanent individual characteristics such as one sees, *e.g.*, in mankind, hence, it is *a priori* probable that these pulse variations noted in *Daphnia* are either temporary conditions (no observation here lasted over two hours), or else differences due to the greatly varying ages of the specimens observed, the *Daphniæ* having among them individuals comparatively young and others relatively old, with a comparative range very much greater than was the case with *Cambarus*, *Daphnia* living but a single summer while *Cambarus* may have a life-period of many years.

Concerning the rhythm of the heart-beat one thing was especially striking throughout the research, namely the persistence of the rate under many very "adverse" circumstances. Evidence of this is amply supplied below under the respective conditions of the experimentation. So marked is this persistence in the case of *Daphnia* that the conclusion is irresistible (although probably not literally exact) that the rhythm is inherent in the protoplasm and alters only with actual alteration of that protoplasm as metabolic energies. One is reminded irresistibly of ions and of "reversible hydrosols," and is firmly convinced at least of muscular automaticity.

This heart has under different conditions various shapes and apparently some variation in the contraction-mode of its parts. Sometimes the heart beats full and round, sometimes it shortened somewhat anteroposteriorly, sometimes even diastole leaves the organ much flattened dorsoventrally, and under very abnormal conditions coordinated systole is abolished for a time or permanently and each segment contracts independently and very irregularly, making a functional state of chaos and active disorder as different as possible from the highly perfect mechanical regularity of the normal heart. All these more or less abnormal conditions may be stages merely of protoplasmic collapse, perhaps degrees of muscular tetanus accompanied by fibrillary activity. There is more evidence of an active diastole in *Daphnia* than is easily found elsewhere, if appearances and the time relations of systole and diastole are of any value as indicators.

III.

A series of experiments was made on the phenomena to be seen when the animal was allowed to dry up on the glass slide under the microscope. By removing carefully with a rolled bit of filter-paper all the water not actually in contact with the animal, the process of drying in the cool laboratory was so slow that the specimen was not wholly dead for a period varying from one-half hour to one hour.

As the water left the viscera and organs, they one by one stopped their movements, more or less gradually. In some cases, a number of minutes before there was final quiet the muscles of the eye underwent tonic spasms alternately at intervals of a few seconds so that the eye was rotated by turns upward and downward to the limits in a very striking manner, this being due, if one may judge by the appearance of the drying protoplasm, to osmotic disturbance in the ophthalmic ganglion to which the eye is attached. These movements continued until the muscles were obviously dry. Another interesting phenomenon of drying outside the heart was the active reverse peristalsis of the gut. This started near the caudal end of the canal, and in one-quarter second ran upward half the length of the gut, the digestive gland showing its contraction about two-thirds of a second later. This reverse peristalsis became more and more conspicuous until the outside of the intestine became too dry for the proper contraction of the circular fibers which alone seemed to be concerned in these remarkable phenomena. In normal digestion peristalsis is not apparent—one sees a gentle surging up and down the gut, but its cause is not visible, whereas the reverse peristalsis was marked both in vigor and in speed.

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*Dearborn: "Notes on the individual Psychophysiology of the Crayfish,"—Am. Jour. Physiol., III, 9, April, 1900, pp. 403-433.

The eye was one of the last organs of the body to cease moving, but for several minutes after it had dried the heart continued beating almost normally both in rate and intensity, with perhaps only a slight diminution in its general size. There was in one or two cases a period of somewhat lessened rate corresponding temporarily with the cessation of the circulation and possibly connected causally with that fact either in the way of nutritive decrease or of a lessening in the hydraulic resistance. Within the last five minutes or so of the heart's action its shape changed somewhat, becoming a little smaller and flatter to a degree dorsoventrally, this change of shape corresponding to a shortening of the elongated cells making up the heart.

The interesting thing for our present purpose in these phenomena of a drying organism is the persistence of the heart's activity beyond that of all the other viscera. This is to be accounted for apparently only on the supposition that the heart has in it more vigor of motion, more of automaticity, so to say, than other organs have. It is certainly not to be explained by any conjecture that the heart remained wet longer than other viscera, for the shell of *Daphnia* is open dorsally just over the heart while the fine, spongy structures, *e.g.*, on the ventral side of the animal and especially the alimentary canal, are much further removed from the drying air than is the heart, yet these were still long before the latter was disturbed in its normality of action. The pulse-rate persisted in a remarkable way, not decreasing appreciably until the very last few minutes of the drying, when it lessened on the average perhaps 40 per cent., the movements of the heart getting seemingly more and more difficult until the decreasing fluidity of the drying protoplasm at last stopped all motion forty or fifty minutes after the water was poured off from around this minute animal. The pulse-rate seemed to lessen only when the cells of the heart had actually begun to die from the structural derangement of their protoplasm.

In one case observed in this direction, a drop of water was poured around the animal some seconds after the heart even had become still. In four seconds feeble beats began, but after continuing for six minutes they gradually stopped again while the other viscera then began to move; three minutes later the heart rather suddenly began to beat once more; in twenty-five minutes it was beating eighty times a minute, but jerkily and small, with no circulation visible; in twenty minutes more the circulation became apparent along the dorsum of the gut, and the animal thereupon, including the heart, set up its normal multiform activity. In another attempt to observe the order of organic revival thus, the interval between the apparent cardiac death and the addition of water was as long as ten seconds, and there resulted only the feeble fibrillary (?) contractions in individual heart cells already noted, and these soon died out. These peculiar movements of the collapsed individual heart cells were conspicuous throughout the observations, occurring when the heart's tissue was badly damaged in any way. They may be ill described as an active irregular churning or surging of the flattened heart, the collapsed viscus reminding its observer strikingly of the unrestrained dashing up and down of an active and choppy sea,—an effect as different in kind as possible from the beautifully perfect coördination, the machine-like rhythm of the normally beating heart. These movements exhibit strikingly the activity which is in each cell, inherently, of the heart, and they imply not less strikingly the use and probable delicacy of whatever the mechanism is which coördinates the cells and makes them useful elements of an eminently useful unity, a normal heart.

IV.

Many experiments were made to determine the effects on the heart of mechanical injury to the nervous system. Is the Cladoceran heart in this respect similar to the mammalian heart, sensitive to every considerable shock, augmented or inhibited by strong nervous messages from whatever source they may come? In the absence of detailed anatomical neurology, what neural supply can be physiologically shown to belong to this heart so relatively low in the zoologic "scale?" Are augmentor or inhibitory nerves, or neither, the more primal in the plan of cardiac control as evolved thus far? It will be seen that only the brain proper and the mere beginnings of trunks extending from it are known, the lobster and the crayfish being the only crustaceans whose nerves are understood. On morphological principles we may be sure that a considerable nerve runs along the alimentary canal somewhere, connecting the brain with an important center in or near the bend of the abdomen—guesses which these experiments also have suggested and wellnigh proved true. Moreover, a nerve to the heart is practically certain, but its relations still are in doubt.

The first part of the experiments involving injury to the nervous system were of the nature of acute stimulation or of actual puncture. A very fine steel needle in a handle with 2 mm. of the point bent at right angles was the instrument employed, and the stimulations were made usually on the stage of the microscope, thus insuring exact localization of the injury, although compared with the nerves of *Daphnia* a millimeter or two long, the finest instrument producible is clumsy indeed. These experiments were conducted, however, in a way which assured that possible uncertainties arising from too extensive injury by this relatively awkward instrument should offset each other. So small is this animal that exact determination of the location of specific centers was not attempted, it being impracticable without, at least, some apparatus of extreme delicacy for exactly localizing punctures much smaller than those of the finest needle. The present research contemplated no such anatomical study, but only the generalities of the heart's control, if any exist, by the nervous system. From a large number a few experiments have been selected for report in detail, so far as detail is recordable in experiments on so small and delicate an animal. Each case represents the tests made on a different and perfectly normal individual. (1) Puncture through about the center of the brain stopped the heart, the oscillations of the eye and the movements of the feet except those lying most posteriorly. About two minutes later the heart began to beat very slowly and feebly, especially its anterior portion, but this decreased shortly and the heart stopped. (2) Another similar puncture of the brain a little to one side of the place where the puncture in the first instance was made, produced no apparent effect on the heart whatever. (3) In another experiment, ten complete punctures within five minutes, disintegrating apparently practically the whole brain, caused no obvious cardiac effect save a slowing of the pulse rate of about 35 per cent. after the last of the punctures. The heart then gradually lessened the full extent of its systole, especially that of the posterior (or auricular?) part, and gradually slowed somewhat; in about seven minutes from the time of the last puncture the heart suddenly stopped, although the legs were still actively moving and at their normal rate. (4) A fine puncture of the brain in its extreme ventral portion caused no obvious effect on the heart. (5) Puncture in the posterior part of the larger mass of the brain stopped the heart instantly; in two minutes it started again, but stopped three minutes later. Half an hour later heart was beating, near systole, at 115 rate, with nothing else in the animal to be seen which was abnormal. (6) Puncture on dorsal anterior side of brain produced no manifest effect on the heart. (7) Puncture in the region of the posterior bend of the gut (where, it has been already said, there seems to be a nerve center of some sort) caused heart to stop instantly; it began to beat again in one and a half minutes, and plainly at the anterior end of the heart, the contraction in the course of two seconds spreading thence over the whole heart, until it beat normally. Another stimulation of the same individual one-seventh the body length toward the head caused the heart to again stop, the beat being resumed in three minutes. A third gentle puncture in about the middle of the body caused once more an instant standstill; eight minutes later spasmodic but "fibrillary" contractions of the heart began in the posterior part of the heart or auricle. Few animals exhibited the cardiac inhibitory function as perfectly as did this specimen, although stimulation in the posterior part of the body is much more emphatically inhibitory than is that of the brain proper. These posterior stimuli do not cause the eye, on the other hand, to stop. (8) Puncture ventral to the heart and to the gut, opposite the former, stopped heart instantly, the partial incoordinate movements beginning five minutes later. (9) In another similar experiment heart began to beat two minutes after the inhibition. (10) In another, heart began in three minutes.

These examples of the many puncture and stimulation experiments of this research, taken almost at random from the notes, are sufficient to show the trend of the probability, at least, concerning the nerve supply, in part at least, of the heart. As has been said in advance already, augmentor influence was never observed to follow neural stimulation; on the contrary, whenever any cardiac effect was appreciable at all it was invariably in the direction of inhibition, the heart was lessened in the vigor of its systole, the extent of its diastole slowed or instantly stopped. The experimental facts are interesting, for they strongly imply that in this simple heart, at least, the preponderating neural influences are wholly inhibitory, for the probable nervous system was well gone over in these stimulation experiments, and undoubted augmentation never occurred. The drying experiments already reported, as well as others yet to be described below, indicate that *Daphnia's* heart has an extreme persistence of rate and vigor of its own, which can be lessened permanently only by the most powerful of agencies, such agencies in fact for the most part as actually disorganize or tend to disorganize the protoplasm of the neuro-muscular cardiac mechanism. We have seen, however, that temporary inhibition is easily brought about from nearly all parts of the central nervous system. These two circumstances combined (the inhibitory influence of the stimulation of nerves and the extraordinary automaticity of the heart itself) make the supposition emphatic that the cardiac muscle cells set the pace and that the nerves probably in connection with them inhibit or tend to inhibit their action. Nerves restrain the heart when organic need arises. Only by such supposition do the facts brought to light by these simple experiments get adequate explanation. If, with further evolution beyond Cladocera in the animal "scale," augmentor nerves have been developed to better adjust the action of the heart to the ever-complicating relations of complexer organs, still in relatively simple *Daphnia* these augmentor nerves are lacking, or, if present, are not stimulated to action by any agencies employed in this research. The heart perhaps looks to its food for strength and to the normal composition and metabolism of its protoplasm for its proper speed of effort, but to its nerves for the influence to rest when it should be less active for the bodily good and to save its strength when there is opportunity. Indeed, it is rather more than possible that this principle may obtain in many organs of many forms of animal life; numerous facts suggest how very widespread is the importance of inhibitory energy in physiology. Be the principle as it may, one sees in *Daphnia* only inhibition of cardiac function, and rarely or never augmentation.

(To be Continued.)

PNEUMONIA: AN INFECTIOUS DISEASE.

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It is only in late years that this disease has been generally recognized as one belonging to the infectious group. All kinds and conceivable theories have been advanced to account for it being so widely disseminated. Even at the present date few will believe that the effect of cold (as such), is not in itself the sole cause for pneumonia, but one will be more apt to accept the theory of infectiousness if told that there is as much if not more pneumonia in temperate climates than in the extreme cold of the northern States or of Canada. Such however is a fact.

Because of the exposed condition of the lung to the vicissitudes of weather, and noting that the majority of attacks come on during the winter months, we long labored under the delusion that sudden exposure to cold and dampness were the sole etiological factors in producing the disease. It will be attempted to present sufficient evidence to prove the position maintained by several writers that exposure to cold or cold and dampness are merely incidental and remote factors. That it is caused by the pneumococcus is as nearly certain as the skill of careful experimentation will allow.

The exposure theory has been severely attacked by many on purely clinical grounds and by none more logically than Woods Hutchinson when he pointed out that, "Fatal lung diseases in any given race or class, particularly of tuberculosis and pneumonia, is in exactly inverse ratio to the amount of exposure to all sorts of climatic vicissitudes. Diseases of the lungs are emphatically diseases of city dwellers." (Human and Comparative Pathology.)

His position is undoubtedly correct whether applied to man or bovines, and to make it more emphatic in reference to man attention is directed to the mortality lists of certain cities and States. It is emphasized that pneumonia is a disease of overcrowding and not due merely to cold or exposure to cold or to constant living in dampness or a damp climate.

One will be astonished to find that statistics show that in the cold of the North where the exposure must be severe there is no greater ratio of fatality from pneumonia in a given number of population than in the milder climates further south if the environment conditions are the same. That the percentage of deaths in a given number of cases of pneumonia is very much higher in the North during the extreme winter months there is not the slightest question. This I believe to be due rather to the heightened virulency and greater numerical dosage of the infecting organism at this time than to the cold per se. Knowing that there is a greater percentage of recoveries from the disease in the South it is probably true that there are more cases to a given population than in the North. I have no way of ascertaining these figures, however, as the reported death rates are the only figures at hand.

It is quite true that nearly all the cases of pneumonia occur in the three winter months of January, February and March. But this is true of influenza also and the explanation of one will probably apply to the other. For whatever be the cause it would also explain the greater frequency of nearly all the acute infections, especially of smallpox. Neither pneumonia nor tuberculosis is due merely to the greater degree of cold. I would seek the explanation for pneumonia and influenza in these months to the greater dosage of the contagium due to the overcrowding and overheating that one sees in theaters, street cars and other shut up, stuffy places where the heat is great enough to desiccate the germs of these diseases which have been planted in such places, mostly by coughing and spitting. Fresh air and ventilation stop all of them promptly. If contracting a "cold" is the *sine qua non* for an attack of pneumonia we should have the greatest number of cases in the fall and spring, for it is then certainly that we have a greater frequency of chilling of the body.

Auto-infection in pneumonia, directly into the lungs from the mouth and pharynx, is extremely doubtful. It is probable that the pneumococcus is first ejected by the saliva in spitting and, having dried, enters the lungs in dust and this is what happens in overcrowding in our city lives.

This question of influence of cold and crowding is very noticeable if the figures for the smaller and newer towns where there is little overcrowding are taken in comparison with large cities in the same localities. For example take Boston and Worcester. In 1900 in Boston with its overcrowding there were 24.98 deaths from pneumonia to every ten thousand inhabitants, while in Worcester there were only 16.12. Making the parallel more remarkable take Albany with 17.74 to ten thousand and we have Atlanta with practically the same population with 21 to ten thousand.

In comparing the States it was found that in those that are sparsely settled there is little pneumonia. This is true whether north or south. Minnesota for the last ten years had an average of six deaths for each ten thousand population, a very small rate for pneumonia in a very severe climate. Even California and Louisiana are greater with 9.54 and 11.38 respectively. Taking Chicago out of the calculation of Illinois it was found that that would make the population condition about the same as Indiana and the percentage of deaths in these States are then practically the same, while Georgia with a little less population than Indiana has practically the same number of deaths from pneumonia.

There can be no doubt that this disease is one of city life rather than life in the country. It is the disease of segregation, not of isolation, and it would seem to be a disease of overcrowding rather than exposure to cold; hunger, cold and alcoholism being merely agents that favor the disease and apparently influence its mortality.

The following mortality table was compiled principally from the census figures of registration cities and States:

		Population.	Deaths from Pneumonia.	Per 10,000.
1	Boston	500,000	1,260	25.20
2	Worcester	118,421	191	16.12
1	Chicago	1,500,000	2,550	17.
1	Milwaukee	250,000	260	10.40
1	New Orleans	265,000	500	18.87
2	Buffalo	352.387	559	15.86
1	Philadelphia	1,200,000	2,500	20.83
1	San Francisco	320,000	580	18.12
2	Los Angeles	102,479	128	12.49
3	New York City	3,400,000	9,070	26.67
2	St. Paul	163,065	133	8.15
1	Minneapolis	190,000	225	11.84

1=Average for 10 years.
2=1900.
3=Average for 4 years.

State Census of 1900.	Population.	Deaths from Pneumonia.	Per 10,000.
California (outside San Francisco)	1,142,271	1,090	9.54
Georgia	2,216,331	2,598	11.72
Illinois (outside Chicago)	3,122,975	3,331	10.66
Louisiana (outside New Orleans)	1,094,521	1,252	11.38
Maryland (outside Baltimore)	600,093	946	15.76
Minnesota	1,751,394	1,379	7.87

Bacteriology.—The disease is undoubtedly caused by Sternberg's organism, the pneumococcus. As far back as 1880 he called attention to this organism which he had found in his own saliva. Experimentation led him to believe that it was the organism of specificity in pneumonia, and he published this fact in 1885. There is no doubt of his priority of discovery as to the organism itself and its actual and casual relation to pathology, and it is only fair that this honor be accorded him.

Incubative Period.—We have no way of ascertaining or even guessing as to the incubative period in man. There is one point just here that is necessary to mention and which has been referred to before, viz.: There is often well pronounced prodromata, followed by chill and fever, and the most careful clinician is absolutely unable to detect the lung lesion by his ear, notwithstanding he may be on the *qui vive* for pneumonia from the very start. And "yet there must be a condition antecedent to these changes that constitutes the so-called 'first stage,' for which there is no anatomical indication." (Sturgis and Coupland, quoted by Smith.) Here is certainly a colony of pneumococci growing on a respiratory mucous membrane, in this instance well down deep in the air vesicle itself. So far as our senses are concerned it is an invisible colony, undergoing the first phase of its growth, its second phase being the rapidly developed colony causing an abundant outpouring of exudate which, overflowing like a fermenting vat from one vesicle to another, speedily infects the entire lobe. The lung is the only organ of the body which is favorable for the growth of this organism. It grows on the meninges and in joints, though the change in media causes considerable change in its pathology and its exudate. An interesting peculiarity is, that while the organism may grow and multiply in the blood, on the meninges and in joints, it will not cause pneumonia when injected under the skin or into the joints or meninges or into the blood. It seems to be necessary for it to be implanted directly on the lung mucous membrane, for while it is constantly present in the saliva and nasal mucus, it does not become pathogenic until it reaches the air vesicles, where it finds the proper medium. And another exceedingly queer thing is that while the organism multiplies on the upper respiratory tract as a saprophyte and causes no harm, it produces one of the most fatal of diseases if successfully planted in the air vesicle. Here we have an example of the wonderful effect the slightest change in the medium will make in the specificity of certain organisms.

Chief Sources of Infection.—It has been known for years that the common habitat and the only known habitat of the pneumococcus was the saliva and mucus of the upper respiratory tract. Sternberg discovered the organism in his own saliva and it is commonly present in the mouths of most persons. It is also found on the nasal and pharyngeal mucous membranes of many people.

There has been much speculation over the modus operandi of infection. It hardly seems reasonable that the organism reaches the lungs by extension. It lives solely as an obligatory saprophyte in animal mucus and, so far as we know, it is not facultative and will not grow in accidental media outside of the animal organism. It is therefore not a true saprophyte. It is more than likely that to be able for it to reach its destination of a field which furnishes the exact nutritive formula (the lungs) it must be ejected from the body in saliva or sputum and be desiccated. Then when reintroduced and planted on the delicate membrane of the air vesicle, other conditions being favorable, it will grow and multiply and produce the characteristic lesions of the disease. The animal condition necessary to incubate the organism when planted is anything that will lower the vitality either temporarily or continually. A sudden accidental plunge into water, or getting drenched in a cold rain, or exposure to severe snow storms, excite the necessary cultural conditions for the growth of the organism, but, no organism, no pneumonia: that's certain!

It is a well-established clinical observation that the transitional stage from a nasal or bronchial catarrh is not an antecedent to pneumonia. The clinician is challenged to establish his first and preceding symptom as a "bad cold." The onset is more or less sudden with such well-marked clinical manifestations that it makes one feel that a bad cold had nothing whatsoever to do with it. It is acknowledged that chilling may bring about the necessary following of the soil so that, the organism being present, it will then grow, while under normal conditions the victim would have escaped, even though the cold was severe enough to frost-bite. We know that a pigeon which is refractory to certain infections will rapidly succumb if its resisting power is lowered, say by plunging it into ice water. There are many circumstances that one may relate to explain the lowered condition of man, such as getting drunk, severe and exhaustive labor, etc., but when we apply this line of investigation we must not lose sight of the fact that on close inspection of the conditions of overcrowding we find that the proportion of women infected is nearly as great as men.

The census figures show that in 1900, 58,340 men, and 47,631 women died of pneumonia, the difference hardly being great enough to apply the exposure theory as the sole factor.

It certainly is a disease incident to overcrowding, and cold or dampness have nothing to do with its spread, though dryness is a great factor. Baker never said a truer thing than that it was a disease of winter and of *dry* winters. Starr and others think that the cold causes a greater virulency of the organism, thus accounting for the greater frequency and severity of winter cases. Still, it is just as frequent in a given population of the South as in the North, though not so rapidly fatal. I think the more rational explanation is that in the severe winters the atmosphere, inside and outside, is much drier than at other times: and, the weather being severe, people tend to huddle more in theaters and places of amusement or in their homes. There is little or no ventilation for several weeks, and in the meantime the air of these places becomes more and more infected. The severity then of the disease in winter it would seem, is enhanced for the very simple reason that the numerical invasion is so great that the lung is overwhelmed. Lower the standard of resistance then by a drunk, or lack of food, or by severe chilling and the factor of dosage will account for the severity and the number of these cases.

A careful study of the clinical histories of cases in large hospitals is convincing that the "cold" theory is untenable. It is a disease incident to overcrowding and caused much by man's own fault because it could nearly be wiped out by careful details of ventilation and disinfection. It kills as many people as tuberculosis and it is increasing rather than diminishing. It is certainly appalling to think of this stupendous death-rate; and it is more than discouraging to see that nothing is done to check, even in a measure, the spitting habit, which seems to be the only cause of its spread.

OBSERVATIONS ON AMERICAN CLIMATES AND LOCALITIES IN THE TREATMENT OF PULMONARY TUBERCULOSIS.

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THERE is reason to believe that the scourge of pulmonary tuberculosis will eventually be mastered by the science of man. Being a specific infectious disease, the nature and causes of which are adequately understood, it requires no great strain of the imagination to foresee a time, not many generations hence, when this most virulent enemy to human life will, to a great extent, be eliminated as an important factor in mortality statistics.

It is well known that the disease is preventable, and morbidity tables, in not a few localities, have already been perceptibly influenced by the sanitary measures put in operation, as a result of knowledge acquired within a few years. For a very considerable period yet to come, however, consumption will continue to rank as the most effectual weapon of the Grim Destroyer, and the ratio of about one in seven of those who are removed from earthly joys and sorrows by this cause will not be materially altered until we can bring entire batteries to bear where, as yet, only occasional random shots are heard.

If it became known that we are about to engage in a war with a great foreign enemy, which would probably result in the sacrifice of the lives of 100,000 of our fellow citizens, how quickly would our country spring to the call to arms. The great patriotic breast of America would thrill with heroic determination and resolve, and not a hamlet in our broad land that would not yield up its best and bravest in the national defense. Yet we are engaged in a perpetual war with an enemy far more deadly and implacable than any foe which may come against us with ships and soldiers and guns. At the current death-rate from pulmonary consumption more than 10,500,000 of the present population of the United States must succumb to that disease. The paramount importance of this subject is therefore apparent to all. We know the enemy. We are acquainted with his origin, with his methods and with his protean manifestations, and we are also fully cognizant of a well-tested and successful, yet withal expensive, means of operating against him.

The important question is, Do we possess sufficient humanity and love for our fellow creatures to employ our knowledge to the best advantage? Prevention is our chief reliance for the future, but let us here consider this problem: How can we best combat the progress of consumption after it has actually manifested its symptoms and signs in the patient's economy? It is the writer's absolute conviction that some form of climatic treatment, with its accessory circumstances, offers far more hope than all other methods of treatment combined. In an experience of more than twenty years the writer has not known of a single recovery from undoubted tuberculosis in which some change of climate did not constitute an important factor. The patient should, as speedily as possible, be removed from the locality in which the disease was inaugurated. The appearance of phthisis is in itself an evidence that there is something wrong about this particular atmosphere for the patient in question, and if he remain under the same environment he is almost sure to get worse. In the incipient stage the writer has observed some improvement in a removal merely into another street in the city limits of New York. Unquestionable good results have followed a transference of the patient's abode from points in South Brooklyn and lower Manhattan to Washington Heights, in the upper part of the city. The heights above Scarsdale, on the Harlem Road; the elevated ridges about Summit, Short Hills and Morristown, and other points in easy reach of New York have proved themselves of very great therapeutic value, not only in restoring lost tone and vigor in the feeble and anemic, but in not a few instances in arresting a plainly tuberculous tendency. At very convenient distances from the city environs will be found localities possessing atmospheric qualities quite at variance with those found on Manhattan Island.

Prior to April, 1901, when Dr. Legrand N. Denslow presented his paper on the climate of Long Island to the New York Academy of Medicine few medical men realized that within two or three hours' railway journey, in an easterly direction from New York, could be found an area possessing a climate from May to October almost identical with those to which, during the winter months, we send our patients on journeys of over 1,000 to 3,000 miles.

Let us for a moment pause to consider some of these atmospheric conditions as shown by Dr. Denslow's observations. The highest temperature observed at Long Beach in July, 1900, was 88; the lowest, 63, a range of only 25 degrees, or less than at any point in the United States for the corresponding period, except San Diego, Cal. The average relative humidity for August of the same year was 60 per cent.; for September, 54 per cent. This was a much lower average than was observed at any point along the Atlantic coast, lower even than at San Diego or Los Angeles. The average relative humidity for New York City is 78 per cent. The three coolest points along the coast were found to be Nantucket, Block Island and Long Island.

Over a greater part of the State of New York the precipitation is heaviest during the summer months. The reason would appear to be true for Long Island, at least along the south shore and at the easterly end. W. A. Fleet, the United States Government observer at Cutchogue, states that at that point there are one hundred more clear days annually than at New York City. and one hundred and sixty-two more than at Rochester, N. Y. During June, July, August and September there were but eleven cloudy days, while for the corresponding months of 1900 there were only seven. Fogs are comparatively rare. No satisfactory theory has been advanced to explain the remarkable meteorological differences between this area and points on the mainland less than a degree of longitude distant, but these great advantages of dryness, equability and clearness, coupled with its proximity to large centers of population, would seem to mark the district as a promising refuge for certain varieties of bronchial and pulmonary troubles. Cases which progress favorably along our southern seaboard in the winter should certainly do well on Long Island during the summer months.

During the past summer the writer ventured to recommend the easterly and southerly part of Long Island tentatively to three persons having trouble with the respiratory organs. One was a case of chronic bronchitis with asthmatic paroxysms; the second was a case of incipient pulmonary tuberculosis, while the third patient was well advanced in the same disease. The results were as follows: The patient with bronchitis was markedly benefited, and there were only two or three slight asthmatic attacks during a sojourn of two months on the Island. The case of incipient tuberculosis was apparently arrested, there being a disappearance of the cough and physical signs; while the case of advanced phthisis appeared to jog along down hill at about the same rate it had shown in the city, the patient dying in December last.

Within a very short distance of New York City, in almost the opposite direction, will be found another favored locality, possessing a moderately elevated, cool and dry inland climate, quite distant from that last mentioned. The author refers to the Highlands of Southwestern New York. A small detached spur of the Alleghanies, of which the town of Liberty (2,300 feet in elevation), near the dividing line of the Delaware and Hudson watershed, may be taken as a representative point.

By reason of the establishment of the large and flourishing Loomis Sanatorium this region has become well known as a resort for tuberculous cases. The writer will not dwell upon its advantages further than to say that this district offers a combination of desirable features difficult to excel. Patients do well in Sullivan County all the year round.

It is quite remarkable what a transformation has taken place in our views regarding the effects of cold on tuberculosis. Only a few years back we were in the habit of sending all our patients who could get away off to the South with the first appearance of cold weather, quite regardless of the type of the disease. Experience has slowly taught us that many patients fare better at our Northern resorts during the cold winter months than in the summer.

As many as four of the writer's patients are at this moment sojourning in Sullivan County, where the snow is thick on the ground and the temperature many degrees lower than in the city, and the diurnal variations of temperature more marked. The distance being comparatively short, the patients are able to make occasional visits to the city and can be kept under fairly close observation. All of these patients are doing well, and it is hoped that a permanent cure will result in each case. We have learned that a low temperature, especially if free from excessive humidity, is often much more inimical to the development and growth of the bacillus than it is to his intended victim. Nor does variability of heat or cold count for much, provided the atmosphere possesses the qualities of purity, dryness and brightness. There are many other favorable, though less well known, localities in the Shawangunk, as well as in the Catskill Mountains, which will no doubt occupy prominent positions among the health resorts of the near future.

What has been said regarding Sullivan County applies with equal or greater force to the Adirondack region in Northern New York, barring the single element of greater distance from the immense population in and around the metropolis. This fine region, embracing, as it does, about 10,000 square miles of territory, might afford sites for sanatoria, tents and camping grounds sufficient to accommodate all the tuberculous patients in our State and still leave unnumbered acres for private reservations, gentlemen's hunting preserves, etc. The winters are long and cold in the Adirondacks, from seven to ten feet of snow falling annually, but the right kind of cases may safely remain all the year. According to Dr. Trudeau, than whom we have no better authority, the best results are observed during the cold months.

It is not desirable in this place to attempt to detail the many advantages presented by this lovely and picturesque region. Suffice it to say that it offers a safe and hopeful retreat for many types of tuberculosis, and it will no doubt continue to grow in professional favor. Meteorological records at many points in the United States are still very meager, but even with our present incomplete and unsatisfactory knowledge it is apparent that within our limits are contained the counterparts of all the most favorable climatic areas of Europe. In moist, marine climates; in warm, dry and desert climates; in moderate elevations, and in high and dry mountainous resorts it is easy to show that the conditions within our own limits are in nowise inferior to the best found in the Old World. Even in the single item of island climates, in which we have been somewhat deficient, there is a strong probability that we have lately become fully supplied. As practical experience accrues and climatic knowledge of our own country broadens, many innovations in professional practice must take place, and there will be a general rearrangement of our present ideas and methods.

Many fine, salubrious regions have never yet been utilized, while a few have been decidedly overworked. Almost every State in the Union which possesses a mountain district with plateaus of 1,500 feet elevations or over will be found to have localities suitable as resorts for tuberculous persons. Such districts exist in the White Mountains of New Hampshire, the Green Mountains of Vermont, the Blue Ridge in Pennsylvania and Virginia, and the main ranges of the Appalachian chain, extending south through the Carolinas and Tennessee. All of these States possess excellent examples of moderately high mountain climate.

In Florida and along the Pacific coast of Southern California are found the very best types of marine climates. El Paso, Texas, represents a region possessing a superb, elevated, warm, dry climate, while in Arizona we find the prototype of the much-vaunted Egyptian desert climate. The great plateaus of the Rocky Mountain chain present typical examples of the best Alpine Mountain climates which attract health-seekers from all parts of the globe.

Just a word about two or three of these localities. Florida peninsula has probably been more written about and more indiscriminately recommended as a resort for consumptives than any other State of the Union. Many tuberculous persons have been sent there, or gone on their own responsibility, who would have been very much better off at home. This unwise influx of hopeless cases has perceptibly influenced the mortality statistics and materially damaged the reputation of the peninsula as a health resort.

The writer is well aware, as the result of a recent tour of the State, that many persons still go there to the prejudice of their cases, while others render nugatory the benefits of the climatic conditions by entering too freely into the social gaieties at some of the new, fashionable resorts. It cannot be gainsaid, however, that the climate of Florida is just as salubrious and as beneficial as it ever was in the treatment of phthisis, *i.e.*, phthisis of the right kind. It is undeniable that several of the quiet and peaceful localities of the peninsula, including Rock Ledge, Osmond and Daytona on the east coast, Winter Park and Kissimmee in the interior, and Tampa and Belleair on the Gulf, offer as favorable conditions for the residence of the properly selected phthisical cases during the winter months as are to be found on the globe.

Colorado offers exceptional attractions as a resort for weak-lunged persons or for those who are in the early stages of tuberculosis. Persons may safely remain in the State all the year, and there are opportunities for remunerative employment in the flourishing plateau towns which do not exist in any similar locality in the world. Many of the opulent citizens of Denver at the present day went to the State years ago victims of tuberculosis. They live as speaking testimonials of what the Colorado climate is capable of doing. Yet the author knows of many bitter disappointments.

A physician, himself at one time afflicted with early tuberculosis, stated a few weeks since that another month in Colorado would have killed him. He had just sufficient strength left to make the journey to Los Angeles, where he speedily recovered. It should be borne in mind that there is something very positive about the bracing, stimulating mountain air found at the high elevations of the Colorado resorts. Weak, delicate and nervous persons should feel their way very carefully in going there, and in many cases it is better to pause at some intermediate point of less altitude before risking the higher elevations. (This subject will be referred to later.)

This brings us to the consideration of a most vital question in connection with the climatic treatment of tuberculosis. Does experience or reason supply us with any indications whereby we may with a fair chance of success direct a particular patient to the locality where he will be most benefited, *i.e.,* where the atmospheric conditions are most suitable for his case. Much remains to be learned in this direction. The empirical method is still largely relied upon, but we have come in possession of certain rational guidemarks, which should always be taken into consideration in deciding the momentous question as to whether the patient should leave home, and when and where he should go.

In the very beginning of the treatment it is highly important to act promptly. As soon as the disease is identified the patient's environment should be changed, unless there are special reasons which forbid this step. The fact that the bacillus has gained a foothold shows a corelation between the environments of that particular locality and the patient's system favorable to continued bacillary growth and development. The disease is almost sure to progress. But in sending a patient away from home it is not wise to rely blindly upon the climate alone. This should not by any means be regarded as a specific for phthisis, but only as one of our most highly valued aids. Perhaps the patient will not require so much in the way of drug treatment as at his home in the city. Yet the much-prized and highly useful tonic preparations employed in this disease should not be recklessly cast aside. Besides, many of the symptomatic indications, no matter where the patient may go, will continue to require occasional drug treatment. Cases with much fever or other constitutional disturbance should always be treated temporarily at home before sending away.

With reference to where the patient should go, a consideration of the following points is useful:

(1) Ordinary cases in the early stage, with slight lung involvement and little constitutional disturbance, usually show improvement with almost any change of climate. Such cases frequently recover at Liberty, in the Adirondacks, in Florida, Southern California, or Colorado.

(2) In catarrhal cases attended by profuse secretion, a dry climate should be chosen, preferably a warm, dry climate with as little wind as possible. Atmospheric conditions in Arizona and in the neighborhood of El Paso, Texas, barring the occasional Northers at the latter place, are very favorable for this class. Nearer home, Thomasville and Summerville in Georgia, and Aiken, South Carolina, are beneficial. Many catarrhal cases do well in Colorado and New Mexico. These patients usually fare badly in moist climates.

(3) Persons of the nervous, irritable and erethistic temperament do better in a marine climate, and should not be sent to high elevations. During the winter Florida or Southern California may be chosen for the winter months, Old Point Comfort or Atlantic City for the spring, and, perhaps, the South Shore and easterly end of Long Island for the summer.

(4) Sir Hermann Weber advises against sending cases of ulcerative tuberculous laryngitis to high elevations. It would appear that in Colorado not over 25 per cent. of such cases receive benefit. We are informed, however, that 70 per cent. of cases of this type show improvement at the Loomis Sanatorium, at an elevation of 2,300 feet. The writer has seen excellent results in both Florida and Southern California.

(5) Most chronic slowly progressing cases, especially fibrous phthisis, do best in a marine climate. Such persons living in the East do well to spend the winter months in Florida, coming North by easy stages as the spring advances. Even in New York City and vicinity patients of this class often enjoy long periods of immunity from any particular symptoms. One woman under the writer's care, suffering from fibrous phthisis, passed the last twenty-five years of her life in comparative comfort between Orange, N. J., and Manhattan Island.

(6) Cases of phthisis complicated by heart disease should be kept at comparatively low levels. Persons with enfeebled circulation who suffer from cold hands and feet and who shiver in slight draughts should also keep away from high altitudes.

(7) Cases involving much loss of lung substance, or the withdrawal of any considerable portion of the respiratory area from the exercise of its functions, whether from compression of the lung due to empyema, or simple pleurisy to excavation, to retraction from old pleurisies or to emphysema, usually fare badly at high eleva-

tions. Such cases are not susceptible of permanent cure, but their condition is considerably ameliorated by a winter residence in Florida or along the Southern California littoral. Theoretically the low-lying desert belt of Arizona should furnish an ideal climate for such patients, but experience with this region is, so far, too meager to supply us with reliable data.

(8) Puny youths, with transparent skins, spindle legs and ill-formed chests, not actual but potential or probable cases of tuberculosis are generally benefited by a prolonged residence in a high mountain region.

(9) There has been considerable difference of opinion in reference to a proper climate for hemorrhagic cases. The first patient ever referred by the writer to Colorado was seized with his initial pulmonary hemorrhage on the day of his arrival in Denver and suffered daily from this cause during a three weeks' stay, when he returned East. Not a few subsequent hemorrhagic cases have thriven remarkably well at some of the high Colorado and New Mexican resorts. The most careful observers are apparently beginning to agree that the occurrence of hemorrhages is no bar to high altitudes. Dr. S. G. Bonney, of Denver, in a recent communication, embracing a very large experience in Colorado, presents indubitable evidence to show that this elevated region is not prejudicial to hemorrhagic cases. It would appear, with our present knowledge, that the tendency to pulmonary hemorrhages does not in itself furnish an indication either for or against any particular variety of climate.

(10) It is urged by some writers that cases of phthisis accompanied by albuminuria or marked diabetes should be kept away from high climates. The writer, however, has been unable to find any satisfactory evidence in support of these views. Cases so complicated are usually of great severity and apt to be progressive. It would, therefore, appear to be unwise as a rule to send persons having these troubles far from home in any direction.

Let us now consider a final and very practical aspect of this question. We have a variety of the best climates in easy reach. The patient with means and time at his disposal may have the advantage of any kind of atmospheric environment his medical adviser chooses for him. But how about that vast majority who are engaged in the struggle for their daily bread and too often have helpless families depending upon them and who must remain at their work as long as they can drag one foot after the other?

It is not intended here to decry the magnificent benefactions of our wealthy philanthropists to universities, colleges, museums of art, etc. These are grand and able works and worthy of all praise and emulation, but they will be of little use to the thousands all over our fair land, over whom hovers the grim specter of tuberculosis, or who have already entered upon the death struggle with the fell destroyer.

If such a person could at once suspend his occupation and be sent without delay to a properly selected locality in the country, on the seashore or inland, as the conditions may require, where he could for the time be free from the worry and care of toiling for his living, where good food and lodging may be had, and where skilful medical attendance and nursing are supplied, and where the patient ceases to be a menace to his associates and the community, a long step toward the extermination of this scourge would be accomplished. It is the author's conviction that the rich man who establishes and endows one such sanatorium, where his suffering and dying fellow-creatures may be won back to health, hope, and usefulness, is worthy of greater love and honor from his countrymen and will occupy a higher place in the final accounting than he who embellishes a costly church, builds a library or founds a university.

Some of our French contemporaries have recently been passing the time by calculating the cost of providing suitable sanatoria for the half million consumptives in France. They have succeeded in staggering themselves out of all hope in the feasibility of sanatorium treatment. It is therefore recommended that we concentrate all our energies on prevention alone, which is practically an abandonment of the poor devil who already has consumption to his fate.

Thank God that this advice proceeds from France and not from America. It has not been a habit of our countrymen to quail at undertakings because they are difficult or expensive. If we can fully convince our law-makers, as well as our millionaires, of the necessity for tuberculosis hospitals the means for their construction will be forthcoming.

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MEDICAL PROGRESS.

SURGERY.

Etiology of Coxa Vara.—Since Kocher and Hofmeister called the attention of the profession to this condition many years ago, the literature touching on it has developed to a very great degree. Dr. M. HAEDKE (Deut. Zeitsch. f. Chir., Nov., 1902) presents his own as well as some of the later views on the etiology of this condition, and cites a most interesting case which is well illustrated by a radiograph. In the face of the positive findings which present themselves in every case of infantile coxa vara, no one can deny the importance of rickets as an etiological factor in this condition. In the absence of any practical points in the etiology of the condition in the young adult one is obliged theoretically at any rate, to accept the presence of some acute bone softening process. Although in the bulk of all cases this condition may be justly considered one kin to osteomalacia, yet there are a certain number of cases, the author's among them, which point strongly to a true late rachitic process, yet this is not easy to understand. His case was that of a seventeen-year-old boy from the country, who had always worked on a farm. He had always been well so far as could be learned. A few months before the observations were made he began to have a slight pain in the right hip which was particularly marked after sitting. Shortly after this he began to limp and accordingly was put to bed for eight days. This, however, did little good, and the patient soon after noticed that the right leg was becoming shorter. Three months later while attempting to lift a heavy weight he felt a severe pain and was obliged from that time on to quit work. Physical examination showed his right trocanter was two inches above Nelaton's line. Passive motion was limited, particularly in abduction. The limp was very marked. The radiograph shows the cause of the limitations very clearly to be a typical and far-advanced coxa vara. Under simple extension treatment there was no improvement, so that after about a month the typical Langenbeck excision was done. Seven months later the patient was able to go about without pain and the position of the leg was good although the limp remained. The examination of the resected neck showed an angle of about 100 degrees. The convexity was forward while the head itself was turned markedly to the rear, a very marked axial rotation seeming to have taken place. The cartilage of the head was well preserved and smooth. The epiphysial line did not show marked distortion, but in portions of its course could be seen dark red particles of young bone which represent small islands left behind from the diaphysis. Microscopical examination of this area showed changes which seemed characteristic of infantile rickets so clearly that no one could doubt it, the only possible point in question being the etiological importance of the change. It is but fair to say that in this case the well-known history of trauma was not wanting, but it was not given by the patient because there seemed to him no connection between his fall and his sickness until special inquiry into this point was made. Statisticians are beginning to agree, however, that if trauma have any influence in causing coxa vara, it is of the very slightest import. There is something much more far reaching, something probably as yet unrecognized and certainly not understood which causes this deformity. Nor does it seem possible, when we consider the relative infrequency of osteomalacia, when we think of the gravity of its symptoms, of its rarity in men, that so limited an area of bone could be involved in so general a process. On the other hand, as in the case cited, although the microscopic anatomy of the part cannot well be differentiated from richitis, how many cases of adolescent rickets exist in which this deformity is absent. In searching for the ultimate etiological factor, one is thrown back to Kocher's juvenile osteomalacia or better, to some other unknown malacia to account for this rare but serious disease.

Difficulties in Diagnosis Between Hepatic Calculi and Renal Calculi.—The following very valuable observations on these conditions are offered by C. E. BARNETT (Ann. of Surg., Jan., 1903). As to similarity of symptoms, he says that pain from either hepatic or renal calculi might be referred to almost any point, and would be merely a subjective sign of disturbance in that region. The X-ray in differential diagnosis is not so valuable in this region as elsewhere in the body, and unless stereoscopic skiagraphy can be perfected, sufficient to measure depth, there will always be a question in the mind of the operator. To illustrate this point the author has had two radiographs taken, both from living subjects,—one a renal stone, the other a hepatic calculi. Both shadows are directly opposite lumbar vertebra and both shadows show in front of the right transverse process. In a female subject in which he had passed malleable wire wounds into the ductus communis choledochus, pancreatic duct, and the ureter, the radiograph shows the ends of the sounds directly opposite the second lumbar vertebra, leaving a space as large as a half dollar, which would correspond to the kidney pelvis. Behind this body, in order to test the density of the shadow in the different kinds of renal calculi, four different artificial renal stones were placed. The first was composed of calcium oxalate (which shows the dimmest); the second, uric acid; the third, triple phosphates (those two show about equal in density of shadow); the fourth was composed of all three combined, its shadow coming second in density. In another cadaver, also a female, mercury was injected into the gall-bladder after ligating the terminal ducts, and a wire was passed from the urinary bladder, up the ureter into the upper quadrant of the kidney pelvis. The radiograph shows the gall-bladder, from the weight of the mercury, hanging down below, and to the right of the second lumbar vertebra. The sound is above and internal to the gall-bladder shadow. This demonstrates two especial facts—a possible anomalous position of the gall-bladder when weighted down with stones, and the near relation of cystic duct, in this subject at least, with the upper portion of the pelvis of the kidney.

Diagnosis and Treatment of Septic Synovitis.—There is still a marked tendency on the part of the profession to treat inflammatory conditions of the joints, particularly in cases of single involvement, in a perfunctory manner under the general term rheumatism. F. C. WALLIS (Brit. Med. Jour., Jan. 3, 1903) declares that if more attention were given to the diagnosis of the isolated joint cases there would be less disturbance of a chronic nature as a sequal and better success on the part of the practitioner in relieving the immediate symptoms. He calls attention to the fact that in rheumatic fever there is notable a profuse sweating which has its characteristic signs and odor; the condition of the skin, harsh, dry and unpleasant; and the unhappy mental condition, as important guides in differential diagnosis. He cites a most interesting case in which monosynovitis was of frequent and inexplicable occurrence in which the patient was suffering from septic ulceration of the rectum. When the ulcers were healed, the synovitis vanished. Usually this type of synovitis, of which the author has not been able to determine the specific microbe, clears up and leaves the joint in normal condition. There is another form of synovitis which is frequently mistaken for rheumatism, viz., gonorrheal. It differs from the last named in that the onset is not painful, is slow, persistent, will not yield to ordinary treatment and is accompanied by the evidences of gonorrheal infection elsewhere. It is of importance that the nature of the infection should be known at as early a date as may be in order that the joint may be treated surgically, the infection and its products removed, first, because these cases are essentially chronic under any other form of treatment, and second, because a large proportion of them, unless treated radically, end in permanent disability. All known drugs have been used, every form of splint, countless types of irritants; all have been useless in mitigating this dread complication. It is worth remembering that with a simple incision; with mild antiseptic irrigation, with closure of the incision, with rest from ten to fourteen days and with gradual active, and passive movements and massage, these joints will be normal again in less than a month. It is noteworthy that the gonococcus is to be found only in the early stages of the trouble, viz., at the very period when the joint is in most cases thought to be rheumatic. Hence, when aspirated and the turbid exudate examined microscopically the germ is generally found wanting. This does not disprove the presence of gonorrheal infection and it is supposed that the continued synovitis arthritis which may persist a year after the original infection has vanished, is due to the virulent toxins which originally produced by the germ, are for some unknown reason not absorbed but remain in situ until washed out by the surgeon.

Diagnostic Value of Abdominal Rigidity.—The value of a sign or symptom in abdominal cases largely depends upon the period of incidence. For instance, the diagnosis of a well-defined peritonitis is so evident that no single one of the various symptoms is of especial value. On the other hand, any sign that may mark the beginning or diffusion of a peritonitis is the presence of foreign matter in the peritoneal cavity is of the greatest value. J. A. BLAKE (N. Y. Med. Jour., Jan. 3, 1903) emphasizes the value of rigidity as an early diagnostic point and believes that pain and rigidity go hand in hand as the cardinal subjective and objective signs of commencing as well as advancing abdominal trouble. Rigidity is the reflex spasmodic contraction of the muscles of the abdominal wall exerted, not only to protect the irritant peritoneum from influences acting from without the body but also to restrain the movements of the viscera and thus produce rest. It is an active constantly acting spasm of the muscle not necessarily accompanied with swelling or tenderness. Its degree and extent are valuable as evidencing a corresponding degree and extent of abdominal trouble. When slight it may be confounded with the voluntary contraction of muscles to protect a tender viscus and hence the manner of eliciting rigidity is important. Gentle pressure with the flat of the hand, thus gaining the confidence and diverting the attention of the patient, will give much more valuable information than strong deep pressure.

Rigidity is caused not only by inflammation, but also by irritation of the peritoneum and therefore a hemorrhage will cause rigidity even when there is no evidence of inflammation. The pressure of urine or stomach and bowel contents will also produce early rigidity. Numerous cases are cited to prove the above points and show how valuable the sign is as an indication for operation. In typhoid fever the absence of rigidity even when all the other symptoms of perforation are present makes operation of doubtful utility. In thoracic inflammations with the involvement of the diaphragm there is frequently some rigidity of the upper segment of the abdominal wall which may be confusing. On account of the internal support which the muscles obtain at this point slight degrees of rigidity are difficult to appreciate and it is perhaps best to delay operation unless other conditions indicate it, till rigidity has involved the muscle down to or below the navel. It is believed, furthermore, that abdominal rigidity is always present in peritoneal irritation or inflammation, except in the advanced and chronic cases of tuberculous peritonitis where it may be absent.

Operation Without Direct Application of the Fingers.—The perfect sterilization of the surgeon's hands has remained to this day an unsatisfied ideal of aseptic surgery. Unfortunately the use of high degrees of temperature, which can be employed for the sterilization of instruments and dressings, cannot be applied here, where cleanliness is most difficult to achieve. But those who use plenty of warm water, and the warmer the better, during the act of scrubbing the fingers and finger-nails, are the most successful in hand-sterilization. The subsequent use of alcohol, corrosive sublimate and other chemical disinfectants is less important than the preliminary mechanical cleansing of the hands, in the opinion of Prof. KÖNIG (Berl. klin. Woch., Jan. 5, 1903). However, not even the most conscientious preparation of the hands will guarantee absolute sterility. The greater the duration of an operation, and the more active the employment of the fingers, the greater the danger of wound-infection. König asks whether the direct application of the fingers cannot be dispensed with. Anybody who is familiar with the complexity and difficulty of intra-abdominal operative procedures will at once reply in the negative. König, however, undertook to ascertain how far the proposed method of operating could be carried. Beginning with operations on joints, he extended his experiments at first to operations on bones, then to superficial tumors, cranial operations, and finally he undertook to perform the simple operations on the vermiform appendix without the direct application of the fingers. In one year 600 cases out of a total of 1,000 in König's clinic, were treated in this manner, a large proportion being bone and joint cases. König declares unequivocally that the majority of the simple operative procedures undertaken by the general practitioner can be carried out according to his proposed method. A modification of the length of handles of instruments is necessary, and the operator and his assistants must be thoroughly drilled in the new technic. König describes in detail his method of procedure in osteotomy.

Nephrotomy for Anuria.—Some interesting points concerning anuria are brought out by F. BOMMARITO (Gaz. Sicil. Med. e Chir., Jan. 15, 1903) in the case-histories of two patients in whom anuria persisted four and twelve days respectively without uremic symptoms and in whom operation revealed the presence of calculi in the pelvis and body of the renal tissue. From the facts that the size and location of the calculi and absence of dilation of the ureters and pelvis, as well as absence of hydronephrosis preclude the possibility of anuria depending upon mechanical occlusion, the author holds that reflex or spasmodic inhibition of secretion was responsible for the trouble. This theory seems to be borne out by the entire absence of urine in the pelvis at the time of operation, and by the prompt resumption of the normal function in the right kidney of the second case after removal of the calculus from the body of the left; the reestablished urinary secretion of the latter being carried off through a drain in the external wound. Bommarito finds that absolute anuria almost invariably occurs in subjects who have long suffered from renal lithiasis; this inducing either mechanical or reflex anuria; and in all such cases nephritis is present to some extent in both kidneys. He, therefore, concludes that operation should not be deferred till symptoms of intoxication appear, but should be done promptly before the damage to the renal tissue, which follows in the train of such anuria, progresses too far.

Incontinence of Urine.—The vexatious condition of patients suffering from incontinence of urine and the general obstinacy of the condition render new suggestions as to treatment attractive. Injection of air into the cellular planes is suggested by BERARD (La Sem. Méd., Jan. 21, 1903), who had occasion to observe a young woman, eighteen years old, suffering from nocturnal incontinence, which resisted compromise and the customary division of the meatus with the removal of polypi, and also careful antisepsis of the vulva, vagina and urethra. He then tried epidural injections of artificial serum, as suggested by Albarran and Cathelin, which temporarily succeeded for several days. Encouraged by this result, he followed the suggestion of Jaboulay, namely, of affecting the sacral complex and the hypogastric complex, just in front of the vertebral column, by bringing about a true lessening of the cellular tissue by the injection of sterile air. He carried out the injection in the rectococcygian râphe, aided by a finger in the rectum as guide, to prevent penetration of that viscus. About 150 cubic centimeters were thus injected in the perirectal space, causing the patient a feeling of distention, then of colicky pain. The air seems to have mounted upward in front of the spinal column, up to the level of the clavicles, for there were several cardiopulmonary manifestations, but after a quarter of an hour, all these symptoms disappeared.

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SATURDAY, MARCH 21, 1903.

VACCINATION IN EARLY CHILDHOOD.

FOR several years past, about this season of the year, we have had a maximum in the curve of smallpox frequency throughout this country. The present year is no exception, and the reports of the Surgeon-general of the marine hospital service show that while we have not as much smallpox as for several years, and only about one-half as much as last year, there is enough of the disease in the country to justify the expression that smallpox is epidemic. New York has been spared almost entirely during the present winter, thanks to the effective work of our Board of Health last year, but some of the other cities of the country have suffered severely. Smallpox has not become endemic in this country, but it is very evident that the disease will not be eradicated unless the most careful precautions are taken to guard against its further distribution.

There remains among a large number of the intelligent classes of our population a serious prejudice against vaccination. This does not manifest itself as a rule by open opposition to the legal enforcement of vaccination, but it keeps most people from having their children vaccinated until they come of school age, when the municipal school regulations require it.

There is no longer any good ground for people to argue against the benefits conferred by vaccination. Some of the recent statistics are very striking. In London, for instance, during the last ten years of the nineteenth century, 125 persons who had at some time during their lives been vaccinated took smallpox. Some of the vaccinations had been performed as long as twenty years before the occurrence of an attack of smallpox. In some the scar that remained was so small as to make it very clear that the vaccination had taken but very slightly, yet not a single one of these individuals died. On the other hand, 672 individuals who had never been vaccinated contracted smallpox and among these there were 153 victims of the disease.

In Germany, where vaccination regulations are stringent and are carefully carried out, the deaths from smallpox are so few as to amount to practically nothing in the mortality records. Most of the cases of smallpox seen in Germany occur among visitors to the country, and it is noteworthy how many of them occur among those who, having perhaps been born in Germany, have been away from the country during their childhood and youth and have returned as adults, when they are beyond the enforcement of vaccination regulations. The comparison between the amount of smallpox in the German army and that in the French army during thirty-five years, or since the Franco-German war, is too well known to need repetition here except for the statement that while the French army has had tens of thousands of cases of smallpox, the disease in the German army has placed a few hundred on the sick list, and while there have been no epidemics among the German soldiers there have been several very serious epidemics in French barracks and encampments.

In recent years there has not been any difficulty in securing nurses for smallpox patients, or physicians to attend them, and such attendants have not been recruited exclusively, as before, from the ranks of those who had smallpox. It is well understood now that vaccination repeated until it ceases to take, furnishes a complete protection against smallpox and none of the nurses, or medical attendants who have faithfully taken this precaution have suffered from the disease. Considering the well-known contagiousness of smallpox this is the best possible proof that vaccination is absolutely protective. There is no reason then why such protection should be delayed until the age of six years. Those who have been vaccinated once successfully, always suffer less inconvenience from subsequent vaccinations, so that the sooner children are brought under the influence of the vaccine virus the better.

The Chicago Board of Health pointed out recently that a number of cases of smallpox had occurred among small children as yet unprotected by vaccination in the crowded districts of the city. The chief medical inspector, Dr. Spalding, says in a recent report: "If parents could see, as I am sometimes compelled to see, sorrowful mothers walking the floor with festering children in their arms, crying and reproaching themselves for neglecting to have their little ones vaccinated, there would be no need of urging the vaccination of babies. A vaccinated child never was known to have smallpox. If people could go to the hospital and see for themselves that this statement is true they would not wait until the vaccination law compelled them to have their children vaccinated at the school age of six years. They certainly would protect their children from smallpox at the earliest favorable moment."

Children under the school age constitute at the present time practically the only class in the community who are in large numbers left unprotected by vaccination. This is an undesirable state of affairs and one that the influence of the family physician should be brought to bear upon, for in him lies the remedy for it. It creates a distinct danger not only for the family, but because it allows fuel for smallpox infection to remain, to no small extent, in communities is also a public danger.

The successful efforts of boards of health in many cities in very recent years seem to indicate that the absolute eradication of smallpox is only a question of the enforcement of existing sanitary regulations. No more desirable consummation is devoutly to be wished than the disappearance of smallpox. In the question of infant vaccination every one must see that one of the most important elements of the problem now left for solution is involved.

FAMILIES OF COLLEGE GRADUATES.

THE discussion aroused by President Eliot's announcement that the Harvard graduates of twenty-five years ago have failed to produce their proper share of the next generation has called forth a similar and a corroborating statement by Prof. Thorndyke of Columbia College. He gathers statistics from a New England college attended by country-born and country-bred sons of parents of small incomes, with the conclusion that the fertility of graduates of this college of a generation ago is between 2 and 2.4. Moreover he says that the college graduate of 1800 through to 1809 produced a family on the average two and a half times as large as his successor two generations later between '70 and '75. The humorists or the pessimists, continuing in imagination this ratio of decrease, might prophesy during the present century a sterile species of mankind, and the college graduate, although the flower of the race, would be like the wonderful product of the florist's care, a single infertile blossom.

Professor Thorndyke feels that the general discussions lead to the conclusion that incapacity may have been the sole cause and probably is the cause of three-fourths of the loss, and that restriction as commonly conceived cannot have been the sole cause. "The racial suicide of the college-bred class seems not to be a social crime—or virtue, if you please—but a disease. Its cure will not be found in moralizing, but in the physical improvement of the mentally superior strain."

If it be a disease then it is the physician's province to discuss it. The pathologic theory is in accord with the general eager spirit of the age to spot the microbe and to discover a serum. But we fear that in the chase of the bacillus and the lust for serum therapy, there is a little too much eagerness to find specifics for every separate organ of the body, and too little attention paid to the body as a whole.

If one is going to treat the case of the individual college graduate, he must suit the remedies to a particular diagnosis; if he is going to prophesy the future of the race he must heed certain general racial laws. In other words, why do we concern ourselves with the fact that the Harvard graduate bears 1.8 children and the New England graduate 2.4? Do we wish to find the microbe of modernity that poisons paternity and inject a moral serum into the veins of youth that will insure the whilom prolific increase of his ancestors, or are we concerned lest the flowers of our race shall cease to bloom because they do not turn to seed?

Let us discuss the individual first. It is an undeniable fact that the American citizen who uses his brains to earn his livelihood does not have as many children as did his colonial progenitors who lived on their farms or who worked with their hands. We think that if the complicated data could be untwisted we would find that college education has nothing to do with the case, that the average business man who enters into the keen competition of modern city life has almost as few children.

There are many factors to be taken into consideration. They are the increasing cost of living, the enlarged scale of living which makes many young men hesitate to marry, the ease with which their passions may be satisfied without the marriage bonds, the diseases that, when contracted, render them sterile, the ambitions and strenuous work that fill their minds to the exclusion of the desire for family life; the decided distaste among many women who have entered into business or social life to bear and care for children. But the greatest common factor is probably the foresight of the prudent man who sacrifices the present to the future. Competition is too great for all men to succeed in professional or business life if they are hampered by the expense and care of many children, consequently they and their equally prudent wives apply their educated minds to the elimination of the possibilities of bearing them.

Zola opens his great novel Fécundité with a modern conversation, in which the young husbands and wives who are intimately acquainted discuss the question politely. One couple thinks children would mar their perfect love of each other, another wants to give undivided care to an only child who is not strong, another father and mother so love their one daughter that they will deny themselves the joy of having more for the sake of giving her all that money and education can bring. The hero of the novel and the ultimate father of twelve children, who eventually bear him over a hundred grandchildren, goes to his poor country house, abashed by his own indiscretions in the matter of paternity, as viewed in the light of the wisdom and prudence of his comrades. The development of the story reveals every form of infidelity, of perversion, of matrimonial infelicity and malpractice. The moral is that true happiness lies in bearing and rearing a large family.

The educated American who has only a small family can read his own moral in his individual case; but no one cause, whether innocent or evil may be attributed to any particular class of Americans, especially to such a varied and artificially grouped class as that of college graduates. If we attribute the cause to a "disease," we can only call it the "disease of modernity," which we fancy is as old as Pericles.

And this brings us to the philosophical view of the race. Malthus and President Roosevelt would, we fear, shake their heads out of tune in their ominous view of the future. There has, doubtless, never been a time when the overproduction of the masses did not threaten to overwhelm the classes, and when the philosophers did not grieve that those who were most competent to lead the race were not the foremost to reproduce their own kind. And yet, in spite of ominous predictions, society has risen to successive heights of civilization.

The law that governs the rise of nations is like the law of convection currents. As new molecules are constantly carried up to the energized point of steam, so are the ranks of climbers in the world of men continually rising to positions of power. Those who have reached the top do more than merely reproduce their kind. They transmit their energy, and it is thus that they truly reproduce themselves.

What though college graduates do not replace themselves in their universities by their own sons! They have filled their places a hundred times by their influence, their teaching and their vitalized energy.

NEED OF INTEREST IN MEDICAL HISTORY.

We called attention in a recent issue of the Medical News (editorial February 21, 1903) to the movement for the exploitation of the sources of medical history here in America, which is just becoming a prominent feature of our medical literature. That there is distinct need for such a worthy movement, if important historical data—material and documents—are not to be permitted to be irreparably lost, is not hard to make clear. In looking up the details of the life of Dr. John Stearns, a short sketch of which appears in the present issue of the Medical News, we found the sources of available information extremely meager, and portraits of Dr. Stearns so rare that it was impossible to obtain a copy of one for illustration purposes for this issue. Now, Dr. Stearns was the first president of the New York Academy of Medicine and one of the prime movers in the organization of The Medical Society of the State of New York, one of the few medical organizations of the early days that has maintained its identity down to the present time.

Dr. Stearns was above all a medical organizer. To him we owe one of the first regular medical societies, that of Saratoga County, and he was one of the men who in the Medical Society of the State of New York elaborated the idea of a national organization of medical men and became thus the actual founder of the present American Medical Association. It is too bad to think then that the example of his life may fail to have the effect that it should have because the details of it will be lacking to future generations. The Medical Society of the State of New York is about to begin its preparations for the celebration of its centenary in 1906. The committee appointed for the initiation of preparations for that event can do no better service to medicine and to the medical profession of this country than to gather together all the available information with regard to these men who spent their time and labor in securing the organization of the medical men of the United States.

ECHOES AND NEWS.

NEW YORK.

New Beds at the Ruptured and Crippled.—The Hospital of the Ruptured and Crippled has established twenty new beds for the use of adult females.

Appointment of Dr. Noyes.—Dr. W. B. Noyes has been appointed consulting neurologist to the Mountainside Hospital in Montclair, N. J.

Tarrytown State Hospital.—Dr. H. A. Gates, of Delhi, N. Y.; Dr. Grant C. Madill, of Ogdensburg, N. Y., and Dr. Frank Walker Sears, of Binghamton, N. Y., have been appointed as consulting surgeons to the New York State Hospital for the Care of Crippled and Deformed Children, at Tarrytown, N. Y.

Fight Against Tuberculosis.—The committee on the prevention of tuberculosis of the Charity Organization Society have issued the following pamphlet bearing on the fight with tuberculosis:

Why Fight It? BECAUSE more people die of consumption than from any other disease.
Each year 1,095,000 of the people of the world die of it. In the United States over 100,000 die every year of consumption. Every day 3,000, and each minute of the day 2 persons fall before this enemy. How many of your friends have died of it?

BECAUSE it is a disease which spreads from one person to another, and any one may catch it.

BECAUSE it is chiefly caused by the filthy habit of spitting.

BECAUSE it is a disease which can be stopped, and need not spread.

BECAUSE every one may and should help stop it.

BECAUSE already there is change for the better. The number of deaths from consumption is growing less. Twenty years ago there were many more deaths in proportoin to the population than now.

If the tuberculosis death rate of 1886 had been maintained the first nine months of 1902, 4,000 more persons in Manhattan and the Bronx would have died of tuberculosis than actually died in these months.

Could anything be found more inspiring, more plainly indicative of the need for extending the work against this disease?

How Fight It?—BY REMEMBERING THESE FIVE POINTS ABOUT THE ENEMY.

I. People are seldom born with consumption.
II. It is caused by a very small living thing whose name is *Bacillus tuberculosis.*
III. This living thing comes from the sick person through the spit. Sometimes millions are coughed up and spit out in a single day by one consumptive person.
IV. This spit may dry, and the germs mix with the dust and float in the air, settle on the walls or in the carpets.
V. They are then breathed in and settle in the throat and lungs, causing consumption of those parts.

How Fight It?—BY REMEMBERING THESE FIVE POINTS ABOUT THE BODY.

I. Your body can resist these germs, so that they will not spread and cause consumption.
II. If your body is weak it may not be able to resist them.
III. Your body may become weakened. How? By strong drink, which is one of the best helpers the germs have. By other forms of dissipation. By too little food, air and light. By the grip, typhoid fever, pneumonia, bronchitis and sometimes a simple cold.
IV. Keep your body strong so that you can resist the germs. How? Be in the open air as much as possible. Drink plenty of pure water. Keep early hours. Sleep eight hours out of the twenty-four. Live as regular a life as possible; eat plain, good food; see that the bowels move freely every day. Consult a doctor if you have a cough, or are run down, or if you cannot stand as much work as you could formerly.
V. Do not spit yourself or allow your consumptive friends to spit on the floor, carpet, stove, wall or street, or anywhere except in a cup or spittoon for that purpose. This cup should contain water so that the matter will not dry. When not at home, or in a place where a spittoon cannot be used carry little pieces of tissue paper, and after use burn them.

Tell your friends that consumption is one of the oftenest cured of all chronic diseases, and can be cured in nearly all cases, but it must be taken very early.

Are You Interested? If you wish to read more on this important matter, write to the Charity Organization Society, 105 East Twenty-second Street, New York, for information.

Gift to Long Island College Hospital.—It has been announced that Long Island College Hospital is to have a new structure, replacing the present building occupied by it. This will be done through the generosity of J. Rogers Maxwell, who has offered to build at his own expense the two central sections of the proposed structure as a memorial to his brother, Henry W. Maxwell, who for many years was a member of the Board of Regents of the hospital, and who, at the time of his death, was engaged on a plan for its reconstruction. Mr. Maxwell's offer was set forth in a letter to the Board of Regents, in which he says: "It is my desire to erect a memorial to my late brother, Henry W. Maxwell, and it is fitting that this memorial should be a fulfilment of his desire to obtain new buildings and an equipment for the Long Island College Hospital. I therefore offer to the Board of Regents to construct and equip the two central buildings shown on the accompanying perspective drawing and plans, upon the premises now owned by the institution. Upon acceptance of this offer, I shall make all necessary contracts in my own name, and when completed I shall deliver into your possession these buildings, which shall be named the Henry W. Maxwell Memorial." The new Long Island College Hospital is to consist of four sections. The two sections proposed to be erected by Mr. Maxwell are to form the main building on Henry Street. There are to be wings on the Amity Street and Pacific Street sides. It is expected that friends of the late Dr. Alexander J. C. Skene will erect the Amity Street wing as a memorial to him, and it is intended to make an appeal to the public for funds with which to build the Pacific Street wing. George Foster Peabody and his brothers, Royal and Charles Peabody, it is said, have offered to defray the expense of equipping an operating amphitheater on the top floor of the Amity Street wing to accommodate 250 students.

The whole hospital structure will cost in the neighborhood of $1,000,000 and it is expected will be one of the most perfectly equipped in the whole country. In addition to the hospital building the institution possesses the Hoagland Laboratory, erected on Henry Street, opposite the hospital, by Dr. Cornelius N. Hoagland, the Polhemus Clinic, on the southwest corner of Amity and Henry Streets, erected by Mrs. Caroline H. Polhemus, as a memorial to her husband, Henry D. Polhemus, and a home for nurses known as the Dudley Memorial, built by Henry W. Maxwell, in memory of Dr. William H. Dudley, one of the organizers of the German Central Dispensary which afterward became the Long Island College Hospital. The latter building has just been completed and turned over to the Board of Regents of the hospital by Mr. Maxwell's executors. It is on the southeast corner of Henry and Amity Streets.

Dr. Lederle Is Praised.—After a searching examination conducted by a large number of individuals under the direction of a special committee the City Club to-day makes public what is termed "A Statement of Facts" concerning the Health Department of this city. This pamphlet is to be widely distributed, and while it is stated that it is not a campaign document and is declared to be the desire of the club to present facts without reference to their political effect, the committee points out that the mere recital of the facts involves an inevitable contrast between the administration of this department under Commissioners Murphy and Sexton and under Dr. Lederle. The report is signed by Messrs. Charles C. Nadal, William H. Baldwin, Jr.; Horace E. Deming, Wheeler H. Peckham and Thomas R. Slicer.

It says that "among those informed upon the subject, the Department of Health has long been believed to be one of the most corruptly profitable of the city departments. In recent years, at least, there has been no legislative investigation of this department, as there has been, of the Police Department and of some others. Persons who made special investigation of the matter charged that the aggregate of blackmailing by officials of the Health Department amounted to fully $1,500,000 a year. An investigation in February, 1902, showed that in more than a thousand cases unlawful nuisances had been continued with the connivance of the department. Upon taking charge of the Health Department Dr. Lederle found that for four years it had been the refuge for the faithful of Tammany Hall, rather than an instrument of government. Helpers put down on the pay rolls as clerks and drawing good salaries were sitting around the corridors smoking and gossiping, and some of the employes would often stagger to and from their work in a state of intoxication. For one old, broken down politician the title of 'custodian of records' had been created, although the records were really kept by the registrar.

"Dr. Lederle immediately dismissed 157 employes. One whole division in the sanitary bureau was abolished and two other divisions were consolidated into one. When the reclassification of employes was completed it was found that about $100,000 had been saved to the city annually in salaries alone. He has dismissed twenty employes under charges of intoxication, wilful neglect of duty, failure to report and making false reports, and fifteen have resigned under charges.

"During Mayor Van Wyck's administration requisitions for supplies made by the various offices, laboratories and hospitals were regularly presented to the president's private secretary, who wrote upon each requisition the names of persons, firms or corporations to be asked for estimates. The present practice of the department is to obtain an estimate in each case from two or more reputable manufacturers or regular wholesale dealers. The food supply for the hospitals and some of the miscellaneous supplies which are used in great quantities are bought under annual contracts made after competitive bidding. Before 1902 this was the practice only as to coal."

Three times as much money was collected for violations of the Sanitary Code last year by Dr. Lederle as by his predecessor. In 1902 the department renovated twice as many houses which had been occupied by consumptives as had been renovated the year before. There was a decrease of seven per cent. in the number of deaths from consumption.

Estate of Dr. T. G. Thomas.—The will of Dr. Theodore Gaillard Thomas was filed for probate with the Surrogate last week. Dr. Thomas died Feb. 28 at Thomasville, Ga., leaving an estate believed to amount to more than $1,000,000.

PHILADELPHIA.

Dr. Kirk Selected as Representative to International Congress.—Dr. Edward S. Kirk, Dean of the Dental Department of the University of Pennsylvania, has been selected by the State Department to represent this country at the Fourteenth International Congress of Medicine which meets at Madrid, April 26.

Finsen Light Apparatus at Polyclinic Hospital.—The authorities of the Polyclinic Hospital recently gave to invited guests a demonstration of the Finsen light apparatus that has lately been installed in that institution, the first in the city to treat diseases with concentrated light. Two patients have been undergoing treatment by the light since its instalment two weeks ago.

Wholesale Murder by "Herb Doctor" Suspected.—The arrest of George Hossey, a so-called negro herb doctor of this city, is believed to be the first step in the unearthing of a long list of murders that may number thirty or more. The negro is charged with being an accessory to the murder of William Danz in the summer of 1901. He has been dispensing medicine for years and in view of the ease with which poison was obtained from him by a detective, ostensibly for the murder of a woman, the authorities believe that many other persons secured poison for the same purpose.

Cooper Hospital May Suffer Severe Loss.—The recent decision of the Court of Errors and Appeals at Trenton upholding the claim of the city of Camden for taxes on all property owned by the Cooper Hospital and not directly used for hospital purposes will, it is said, cause a reduction in the income of the hospital from its real estate holdings of between three and four thousand dollars. This diminution in revenue will, it is feared, curtail the work of the institution. The hospital has never received any public support, having been built, endowed, and maintained by private funds coming almost entirely from members of the Cooper family.

Difficult to Enforce Law Against Expectoration.—The enforcement of the provisions of the ordinance of Councils, declaring the practice of expectorating on the sidewalks of the city, in cars or other conveyances, a nuisance prejudicial to health, and imposing a fine of $1 and costs upon all offenders, which became a law on March 10, is causing the police officials some concern, but it will be enforced by them, if possible. Several conferences have been held by the officials of the Bureau of Police regarding the provisions of the measure, and the best manner of carrying the same into effect, but no definite action has as yet been taken further than the issuance of orders by Director of Public Safety English through Superintendent Quirk to the patrolmen in the representative districts to arrest all offenders. Select Councilman Wiltbank, who introduced the ordinance, is in favor of placing a notice on every telegraph and telephone pole in the city, calling the attention of the public to the provisions of the law.

To Prepare Physicians for Tropical Service.—Leading physicians of this city formed on March 9 the Philadelphia Society of Tropical Medicine, the object of which is to prepare students of medicine and graduate physicians for service in the tropical dependencies of the United States. This Society is the first of the kind to be organized in this country. This organization is another evidence of the recognition in Philadelphia of the growing needs of a knowledge of this branch of medicine. The number or members already enrolled is an encouraging one. The officers are: President, Dr. T. H. Fenton; Vice-Presidents, Drs. J. C. Wilson and J. M. Anders; Secretary, Dr. Joseph McFarland; Treasurer, Dr. E. B. Gleason; Executive Committee, Drs. J. V. Shoemaker, T. H. Fenton, Judson Daland, R. G. Curtin, Orville Horwitz, and Hobart A. Hare.

Birth of Double Monster.—On March 15 a woman in the southern part of the city gave birth to a freak consisting of two male fetuses with perfectly formed heads and limbs but joined from the shoulders to the hips by a band of tissue apparently partly cartilaginous. But one umbilicus was present, indicating a common circulation. The twins weighed eleven pounds. One was dead when born and the other died very shortly afterward. As we write this letter efforts are being made to secure permission for a post mortem to reveal the true condition present.

A Probable Case of Hodgkin's Disease.—At the meeting of the Pediatric Society held March 10, Dr. D. J. Milton Miller exhibited a patient, a boy of fourteen years, showing marked enlargement of the cervical glands and with symptoms of mediastinal involvement. The condition began when the boy was seven years of age as enlargement of the submaxillary glands of the left side. These were removed in 1899. In eight months others in the same region were removed. In ten months they reappeared and were removed, one gland being examined and found tuberculous. In 1902 enlargement again appeared and, for the first time, on the right side. The boy is anemic and the spleen and liver are slightly enlarged. There is now a slight enlargement of the epitrochlear, axillary and inguinal glands. None of the glands have ever showed a tendency to break down or suppurate. The patient's temperature is slightly subnormal. Dr. Miller believes the case to be one of lymphatic tuberculosis with the physical signs of Hodgkin's disease and hence to be classified under that name. In some cases there are reasons for thinking that Hodgkin's disease is tuberculous in nature although many varieties of disease are undoubtedly classified under that name.

The Use of the Electrothermic Angiotribe in Cases of Varicocele.—At the Philadelphia County Medical Society March 11, Dr. Orville Horwitz reported the use of the above instrument in a case of variococele with gratifying results. He spoke first of the indications for operation upon the veins of the cord, mentioning among other statements the fact that he had never seen any amelioration in cases of spermatorrhea follow such procedure. Of the operation for varicocele the open method is much better than the subcutaneous. By either method, however, there is an occasional case of infection from an imperfectly sterilized ligature. Such infection manifests itself at times so late as ten or twelve days after operation. With the hope of securing a method that will obviate this danger, Dr. Horwitz recently tried, in the case of a large varicocele, the electrothermic angiotribe devised by Dr. A. J. Downes of this city. The veins were exposed, the instrument applied and the current passed for forty seconds. No sutures were needed to bring together the ends of the veins hence those undesirable adjuncts were entirely avoided. Recovery was rapid, being complete in eight days, and the operation was followed by no tenderness about the wound nor any evidence of orchitis. So far as the one case can indicate, the use of this angiotribe appears to be the ideal method for the open operation for varicocele. The points in its favor are: (1) It substitutes a less dangerous and more scientific method for the older ones; (2) there is less danger of secondary hemorrhage; (3) there is less danger of consequent thrombosis; (4) there is less pain following the operation; (5) there is no resulting orchitis.

The Rôle of Intracellular Catalytic Processes in the Pathogenesis of Malignant Neoplasms.—Dr. John C. Hemmeter, of Baltimore, as the guest of the Philadelphia County Medical Society, read an interesting paper on this subject. He prefaced his remarks by saying that cancer pathogenesis may be looked upon as a growth of tissue under difficult circumstances. The theories of Thiersch, Cohnheim, Ribbert and others regarding the origin of cancer were briefly discussed, some time being devoted to the consideration of the bacterial theory of origin. Among the difficulties in the way of accepting this theory are: (1) Metastases, these always being tumors like the original and like the organ in which the original tumor developed; (2) by this theory the parasite must live within the cell of the tumor and yet not injure it; (3) it is necessary that every cell contain a parasite and that the parasite divide at the same time that the cell does during multiplication; (4) cancers cannot be transplanted, at least not from man to animals; (5) primary cancer rarely occurs in multiples, which would be expected if parasites were the cause; (6) cancer invades cells of its own type, hence there must be a parasite for each type of cancer. Dr. Hemmeter's attitude toward the parasitic theory is that of agnosticism at present, but he is willing to be convinced. The parasitic origin of cancer has not yet been proved, hence cannot now be accepted. Dr. Hemmeter briefly detailed some experiments looking to the artificial production of cancer that he has made during the past three years. He had the good fortune to secure a dog that had carcinoma of the stomach. In view of the facts that the stomach is of all organs the most frequently the seat of carcinoma and that certain chronic peptic ulcers apparently undergo transformation into carcinomata it occurred to him that if peptic ulcers were produced in animals it might be possible to observe their transition into carcinoma. The cancer in question was transplanted into other dogs but did not grow. Peptic ulcers were then produced artificially in the stomachs of dogs and portions of the cancer transplanted around them but no growth was induced. Filtered extract of the cancer was then injected into the border of the ulcers and in one instance an adenoma followed, the peptic ducts penetrating the submucosa and muscularis. Though it is not possible to prove that the adenoma developed as a result of the injection of the filtrate it suggests that there might have been something in the nature of an enzyme in the cancer cell filtrate that stimulated the cells of the stomach, in the presence of a lesion, to new growth. In a number of cases where the filtrate was first heated, no stipulation of the cells resulted. Experiments seeking to determine if cancer cells have a method of growth differing from that of normal cells were then undertaken by Dr. Hemmeter. Free cancer cells and also cells from fresh normal mammary gland were obtained by penciling and careful manipulation. The action of these cells when placed in an isotonic solution was found to differ, the cancer cells contracting and those from the mammary gland retaining their original size. This indicates that water goes into the tumor when it is growing. Normal cells were found to swell when placed in cancer juice. These and other undetailed facts point to the conclusion that the cause of cancer may be innate in the cell itself. This is not a far-fetched theory when the complex chemical organization of cells is taken into consideration. At least ten enzymes have been isolated from liver cells. It has been determined that there is in the normal cell an enzyme that controls the construction of the protoplasm within that cell. Hence there may be an enzyme, similar in nature, in the cells of malignant neoplasms that controls their growth. The reversibility of enzymes is also a factor to be taken into consideration. This suggests that there is possibly a normal defence against carcinoma in some of the tissues of the body. An argument in favor of this is the fact that most of the metastases in carcinoma are by the lymph stream instead of the blood. Cancer cell masses, as thrombi, are often observed in blood vessels near the tumor and yet there are no metastases from them. Does the blood destroy the specific enzyme in the cancer cells until it is overwhelmed by the latter? Experiments indicate there is some body in the plasma that does destroy the cancer cells or inhibit their growth. Treatment of cancer along that line is thus suggested. Dr. Hemmeter admitted that much of the latter portion of his address was theoretical but had a basis in the experiments that were briefly detailed.

CHICAGO.

New Medical Practice Act.—On March 6, Mr. Weaver introduced a new medical practice act in the legislature, proposed by the Illinois State Medical Society. This act creates a State Board of Medical Examiners, consisting of seven members, who shall be appointed by the Governor with the advice and consent of the Senate. The appointments are to be made from persons nominated by the State Medical Society, and every incorporated society having an actual membership of not less than one hundred licentiates in medicine and surgery, and embracing membership from at least twenty counties, may submit nominations. The term of office is to be seven years.

Smallpox.—During the week ended March 7, 13 cases of smallpox were discovered; two patients died at their homes, and 11 were removed to the Isolation Hospital. There are now nearly 60 patients at the hospital, and 20 deaths have occurred. During February, 180 cases of smallpox were reported to the State Board of Health from forty-five localities in thirty-four counties. In 1902 there were about four thousand cases in the State in February, and the diminution is undoubtedly due to the persistent efforts of the State Board of Health to enforce vaccination. There is still some difficulty met with in handling the disease, because it is often not at first recognized as smallpox. The spread of the disease in many localities is due to the refusal of the local health authorities to accept the diagnosis of the attending physician. They call on the State Board of Health for an Inspector before taking action, and many may be exposed before he comes.

Decreased Mortality.—According to the weekly bulletin of the Health Department, there were 118 fewer deaths reported during the week ended March 7 than during the previous week, a decrease of 16.5 per cent. The mortality rate is still high, however, when compared with that of 1902. The total deaths for the week numbered 595, as against 713 for the last week in February, and 515 in the corresponding week of 1902.

Liability of Hospital for Assault on Patient.—The case of Galesburg Sanitarium against Jacobson, as it is entitled in the Appellate Court of Illinois, Second District, was brought by the latter party to recover damages from the former, a corporation conducting a hospital, in which he was a patient some two months, and he alleged, was assaulted, beaten, mistreated, and injured by the servants and employes of the institution. He was ill, the Court says, and was a patient residing at the hospital for treatment, and was paying for the services he received, and he was entitled to reasonably kind treatment, so far as the nature of the malady will allow. No assault on him was justifiable, except so far as it was necessary to control him at times when he was insane or delirious. On the occasion in question, the servants unnecessarily abused him, and inflicted on him injuries for which the jury were warranted in holding the master responsible. There was no claim that this was a charitable institution, nor any question as to its liability for the negligence of its employes on that account. The fact that the jury awarded but $100 as damages indicated they were not governed by passion or prejudice.

GENERAL.

Septic Sewerage.—The annual report of the Connecticut Sewerage Commission gives exclusively the report of results of two years' test of Worcester, Mass., sewerage in a septic tank, by Professor Kinnicutt, of the Worcester Polytechnic Institute. The experiments have been made in a tank fourteen feet long and five feet in diameter, and the Commission characterizes the report as "a distinct contribution to the sum of knowledge of the principles of sewage disposal by the septic tank which is now an essential part of the disposal system of many cities." The Commission opposes strongly sewering into running streams, urges the reforesting of water sheds for public supply, and suggests that the grave problem of sewerage at Waterbury and in the Naugatuck valley may have to be solved by a great trunk sewer to the Sound on the plan proposed for the Passaic valley in New Jersey.

Insanity and the Population.—The Washington *Times* of March 7 has the following account of a lecture given at the national capital by Dr. William A. White of Binghamton.

He gave a lecture before the National Geographic Society on the "Geographical Distribution of Insanity." Facts and figures accumulated in his lecture, showing that insanity is increasing comparatively much more rapidly than the population. He ascribed as a cause of this heredity, the unrestricted marrying of mentally diseased, and the fact that this country is the dumping ground of the trash of Europe. The latter assertion he supported by quoting figures showing that 25 per cent. of the 25,000 insane persons confined in New York asylums were of foreign birth. He stated that the region of the least insanity was that section of the West from the Rockies to the Mississippi, comprising the great agricultural and stock raising belt. Insanity was most prevalent, he stated, in regions where the struggle for existence raged the fiercest and the competition was the greatest. The two greatest centers of insanity in the United States, he said, were New England, where there is one insane person to every 335 inhabitants, and in California, where out of every 380 people there is one lunatic. He showed that insanity was unknown among the Indians, and almost so among the negroes in the South, although in the North, where the negro comes in competition with the white laborer, the suicide rate runs to a high point. Agriculture seems, from the figures he presented, to be the occupation least liable to produce insanity. Dr. White considers that the principal causes and agents of insanity were alcoholism, mental worry, despair, disappointment, and all other pains which afflict the mind of the highly civilized individual, and those who live where the struggle for existence is pitiless.

Honor for Dr. Lyle.—Friends of Miss Annie G. Lyle, M.D., who was graduated from the Johns Hopkins Medical School in 1902, will be gratified to learn that she has been appointed assistant to Professor Esrech, in the University of Vienna. Professor Esrech is a noted specialist in diseases of children, and this recognition of Dr. Lyle's medical ability is an honor such as falls to few Americans, especially in such a conservative center of medical research as the University of Vienna.

American Medical Association Meeting.—For this occasion the Mobile and Ohio Railroad will make a rate of one first-class fare for the round trip, viz.: $18 from St. Louis, $23 from Chicago. Tickets sold May 1 to 4, inclusive, limit 10 days, with privilege of extension to May 30, on payment of 50 cents. Write Jno. M. Beall, A. G. P. A., St. Louis, for full particulars concerning rates.

Meeting American Medical Association New Orleans, La.—On account of the above occasion the Southern Railway will sell tickets for the round trip, limited 10 days, for one fare. From the trunk line territory the rates will be based on regular fares to Washington or trunk line western termini, added to one first-class fare therefrom, limited to continuous passage, and will be sold May 1, 2, and 3, with final limit 10 days from date of sale. By deposit of ticket by original purchaser, and payment of 50 cents, to joint agent, New Orleans, not later than May 12, extension of final limit may be obtained to enable the purchaser to reach original starting point not later than May 30, 1903. The Southern Railway operates three trains daily from New York, carrying Pullman sleeping, dining and observation cars. By the request of members of the American Medical Association in the East, on Saturday, May 2, special service has been arranged to leave New York at 4.25 P.M., via Washington, Atlanta and Montgomery. Those desiring Pullman reservation should send in their names as soon as possible. Time, New York to New Orleans, 39 hours. For further information call or write New York Offices, Southern Railway, 271 and 1185 Broadway.

College of Physicians and Surgeons, Baltimore.—Post-graduate courses in medicine, surgery, gynecology, obstetrics, diseases of eye and ear, pediatrics, diseases of the gastro-intestinal canal, nose and throat, genitourinary and diseases of the skin, nervous diseases and electrotherapeutics, X-ray diagnosis and pathology will be given beginning May 1 and extending to June 15. Laboratory courses in clinical medicine, pathology, bacteriology and anatomy are also offered.

Baltimore Items.—Dr. M. B. Tinker has tendered his resignation as assistant resident physician at the Johns Hopkins Hospital. The resignation will go into effect April 1. Dr. Tinker expects to practice in some other city.

Dr. Howard A. Kelly leaves here early in April to attend the International Gynecological Congress in Madrid, where he will give his latest researches.

The University of Maryland is having plans drawn up for the erection of new pathological, bacteriological and clinical laboratories.

Obituary.—Dr. Manuel Barros Borgoño, the eminent surgeon and rector of the University of Santiago, is dead.

Dr. A. W. Church, a nephew of the late Dean Church, canon of St. Paul's Cathedral, London, died of appendicitis last week at St. Francis's Hospital, Jersey City. He was thirty-two years old. He graduated from the Edinburgh University, Scotland, and the Columbia Medical School, of New York. Church formerly practised in Waretown, N. J.

Dr. John Hammell Brower Browning died Tuesday at Smithtown Branch, L. I. He was graduated from the Columbia University Medical School in 1883, and was at times assistant resident physician of the insane asylum on Ward's Island and house physician and surgeon of St. Francis's Hospital.

Dr. Wm. P. Munn, former president of the Colorado State Medical Society, and also recently the head of the Board of Health of Denver is dead from hemorrhage of the lungs.

Dr. George Beers died from pneumonia last Monday, at his home, No. 375 Central Park West. He was thirty-three years old and had been ill about three weeks. He was born in New York and was graduated from the College of the City of New York. He had been practising medicine in this city for eight years. He leaves a widow and two sisters.

SPECIAL ARTICLE.

EXCURSIONS IN OLD NEW YORK MEDICINE. II.

JOHN STEARNS, FIRST PRESIDENT OF THE NEW YORK ACADEMY OF MEDICINE.

WE began this series of excursions in old New York medicine with a sketch of the life of Dr. John W. Francis, the second President of the New York Academy of Medicine. It was not because the first President of the Academy, Dr. John Stearns, did not deserve the first place, but because Dr. Francis' life and writings mean so much for the students of old New York medicine, and because his contributions to general and medical sources are stores of valuable material that every one must avail himself of if he would know the special contemporary history of the times.

The first President of the New York Academy, Dr. John Stearns, will ever deserve the kindly remembrances and loving veneration, not only of the members of the medical profession of New York City and State, but of the United States, for his unselfish exertions in bringing about for the first time in this country a union of the medical profession, and securing the enactment of the first laws for regulating the practice of medicine. It is to Dr. Stearns' efforts more than to those of any other one man that the present legal position of the medical profession in America is due.

Dr. Stearns was born in Wilbraham, Mass., in May, 1770. He graduated from Yale College with distinguished honors in 1789. He was a medical student in the office of Dr. Erastus Sergeant of Stockbridge, Mass., until 1792, when for a year he went to Philadelphia and attended the lectures of Shippen, Wistar, Rush and others at the University there. In 1793 he began the practice of medicine near Waterford, Saratoga County, N. Y. He proved a successful practitioner, and, before five years, began to agitate the question of union among physicians in order to elevate the dignity of the profession and extend its usefulness. A series of newspaper articles, some written, others inspired by him, relative to the importance of establishing medical societies, appeared in Saratoga, and about the year 1800 a medical society was actually formed. The movement proved to be premature, however. The materials of which it was composed were discordant, and it ultimately broke up without effecting anything definite.

Five years later, in November, 1805, a meeting was held at Ballston, N. Y., that was to be fraught with the happiest of consequences for the physicians of New York State. Besides the members of the profession in Saratoga County, the cooperation of the physicians of the adjoining counties of Washington and Montgomery was asked and a printed circular was issued, calling the attention of the profession to the importance of legislation, for the appropriate legal regulation of the practice of medicine in this State. In the Annals of the Medical Society of the County of Albany, 1806-1851, with biographical sketches of deceased members, by Sylvester D. Willard, M.D. (published by J. Munsell, 78 State street, Albany, in 1864), which is our authority in this matter, it is stated that the leading spirit in this enterprise was Dr. John Stearns of Saratoga. Associated with him were William Patrick and Grant Powell. The meeting was adjourned until January 16, 1806, when the friends of the measure met and memorialized the legislature for the establishment of a medical society.

The memorial did not at first contemplate that it should embrace more than the three counties of Saratoga, Montgomery and Washington. Fortunately for the cause of science, Dr. Alexander Sheldon, of Montgomery, was elected Speaker of the Assembly in 1806. The memorial was referred to a committee of the House, a majority of which were medical men, and they, after examining the bill presented, and realizing how beneficial such a measure would be for the entire commonwealth, suggested at once that instead of a local measure, a general law for the whole State should be recommended. A bill was accordingly drawn up and after careful consideration was presented to the House. The old biographer of Dr. Stearns says "Strange to record, it met with a powerful opposition, and feeble hopes were entertained of its success." Now, after a hundred years of experience with legislation with regard to medical matters, the profession of the Empire State may look back and think that it is never strange when attempts to pass medical measures meet with opposition, since that has been the constant experience.

The bill had been wisely framed, however, and the critical juncture, when its rejection seemed almost inevitable, the Hon. William W. Van Ness (may his name ever be in benediction!) became its most eloquent and powerful advocate. In a speech that was long remembered and whose eloquence became a tradition, he refuted the arguments of the opponents to the bill and pointed out the benefits likely to accrue from the proper regulation of medical affairs in New York State, with such enthusiasm and directness that the passage of the bill was secured. The law was enacted April 4, 1806.

The new institution thus created, received the name of The Medical Society of the State of New York. It owed its inception to the tireless energy of John Stearns. He gave it his time and influence during its early struggles and to him, more than to any other, is due its successful organization and the position of respect that it came almost at once to occupy.

Dr. Stearns became its first secretary and continued to fill the office for several years.

The position of secretary gave him a wide acquaintanceship and his executive ability attracted attention. He was elected to the New York State Senate and served for four years. After his term he continued to reside and engaged in practice in Albany. Here he proved very successful. In 1817, he was elected president of the New York State Medical Society and was reelected for three sucessive years, until 1820, an honor that has never been conferred on any President since. Toward the end of his term as President of the State Medical Society, Dr. Stearns removed to New York where he became prominent as a practitioner and consultant and contributed a number of articles to the medical periodicals of the day.

When the New York Academy of Medicine was organized in 1846, it felt that its first president should be a man distinguished not only in the profession, but also in public life and known to all the State for liberality and uprightness of character. Dr. Stearns accordingly became the first president. At the time he was over seventy-five years of age, but he was still not only possessed of vigorous mentality, but was also active in the pursuit of his professional duties.

His address before the Academy, when taking the position of President, contains some striking sentences that deserve to be quoted. He said: "Let no impostor obtain admission within its sacred walls. Let the inscriptions of your portals be 'Esto perpetua' (Mayst thou last forever). Remember the Academy is consecrated to health, to happiness and to harmony, which I trust will always be its prominent characteristics and may it be the nursery of thousands and tens of thousands and rise like the sun in all its meridian glory to shed its scientific rays over the whole world." The closing sentences of the address are "Could I be assured of the uninterrupted, enduring prosperity of the Academy in disseminating health, happiness and sustaining principles of life, I should die in peace with effusions of gratitude and praise to Almighty God, for his permanent blessings upon our labors."

Only a little more than a year after taking the chair of president of the Academy, Dr. Stearns became a martyr to his desire for medical knowledge. His death was the result of a dissection wound, received while performing an autopsy on an interesting case whose condition the enthusiastic old physician wished to investigate very carefully, because it had proved so puzzling during life. At the time of his death he was in his seventy-ninth year and his obsequies were attended by many of the most prominent people of the city. His private life had furnished the example of a good citizen an unselfish gentleman a trusty friend and an honorable professional man.

There was, forty years ago, in old St. George's Church, New York, a tablet to his memory, which had been erected by his fellow members of the congregation as a testimonial to the faithfulness of his observance of his religious duties. Old St. George's has disappeared, however, giving place to the Mott Iron Works. The tablet to Dr. Stearns should have found a place in the archives of the New York Academy of Medicine, but did not. The present board of church wardens of St. George's Church, though it contains a direct descendant of Dr. Stearns, have no definite information of the present location of the tablet or whether more than a copy of it was preserved in the tearing down of the old church.

Dr. Stearns' principal contribution to medicine was an article, published in 1807, in the eleventh volume of the New York Medical Repository. It contained his observation on the use of ergot in obstetrics. Dr.

Stearns was the first to direct attention to the value of this drug and his reputation as a thorough-going conservative practitioner tempted many physicians to employ it much sooner than would otherwise have been the case, and so led to the speedy introduction of the drug into American practice. His observations with regard to it are entirely original and are of distinct value, even at the present time, for they show that he realized the necessity for using it carefully and with proper regard to the conditions of the pelvic outlet in the particular case. At that time the substance was used as a powder rather than in any extract form, and Dr. Stearns speaks of it by its principal therapeutic activity as *Pulvis parturiens.*

At its recent annual meeting, the Medical Society of the State of New York appointed a committee to begin preparations for the celebration of the one-hundredth anniversary of the foundation of the society. The memorials of that time are mainly wrapped up in the life of Dr. Stearns. For, besides having been the first President of the Academy, he was one of the founders of the New York State Medical Society, and one of those to whom came the first idea of the formation of the American Medical Association. It is rather interesting to find then a bit of startling evidence of how much the present movement for the preservation of historical relics and details that is now in progress was needed to find that it is extremely difficult to obtain a portrait of Dr. Stearns for reproduction. The New York Academy of Medicine, has an oil painting, presented some thirty years ago to the Academy by the Stearns family, and of this the Stearns family have a replica. Of printed portraits, however, there are very few, if any, extant. At the Academy of Medicine the impression is that they have no printed portrait and they know of none in existence. We hoped to print a reproduction of the grand old man of New York medicine, to whom the profession owes so much, but found it impossible to do so, and we sincerely hope that one of the first proofs of the activity of the One-hundredth Anniversary committee will be to make available more memorials of the life of so worthy a member of the New York profession.

CORRESPONDENCE.

THE NEGRO PROBLEM.

To the Editor of the Medical News:

Dear Sir: I have been greatly interested in an article which recently appeared in your journal touching the negro problem. I think you will agree with me that this is by far the most momentous question before the people of the United States, and the one which most urgently presses for consideration. It is at this moment of vital importance to the whole people, irrespective of politics, section or race, yet nobody seems to give it serious study. Instead of scientific investigation, conducted with a single eye to the facts, we have silly sentiment, hysterical irritation or narrow partisanship. We want facts, and facts on a large scale, gathered with scientific impartiality, or a basis for rational action; for without such a basis we shall but—in scriptural phrase—stretch out the line of confusion and lay the stones of emptiness.

It is a fact that widespread uneasiness prevails, lest the negro population, which now numbers about nine millions, and is increasing, should imperil our social conditions and even our civilization, in the not very remote future. It is another fact that race-hatred seems everywhere smouldering beneath the surface, and almost daily breaking out with results that all men must deplore. But after deploring, is it not time to look upon these things as symptoms of a deep-seated evil which urgently calls for remedy? If the course we are now pursuing with the negro is the best possible, let us make sure of the fact, and go on with it; if otherwise, let us try to find out what course will be better.

What is just now important to know is: Have the negroes, as a people, progressed or retrograded since their emancipation? Are they growing more orderly, law-abiding, and moral, or are they growing more lawless, vicious, and criminal? Do statistics show that the "education" we are giving them is making better men and citizens of them—in other words, are "educated" negroes (in proportion to their numbers) less vicious and criminal than the illiterate? Let us know the facts, and we shall know where we stand, while sentimentalism without knowledge may lead us astray.

President Roosevelt's sentimentalism does honor to his heart, but unless his actions are guided by wisdom as well as sentiment, he may give the objects of his sympathy (in scriptural phrase again) the valley of affliction for a door of hope. I am, sir, etc., H.

Baltimore, Md., March 17, 1903.

TRANSACTIONS OF FOREIGN SOCIETIES.

German.

THE COMBAT AGAINST TUBERCULOSIS AS A NATIONAL DISEASE IN GERMANY—INDICATIONS OF SURGICAL TREATMENT OF CHOLELITHIASIS AND CHOLECYSTITIS—THE ROLE PLAYED BY HEREDITY IN PHTHISIS.

J. Katz, at the Berlin Medical Society, Jan. 14, 1903, contributed a paper on the "Combat in Germany against Tuberculosis as a National Sickness." He began with a few introductory remarks upon the necessity of discussing the entire question, and presented a number of statistics, the burden of which was that in 1894 there were 36 tuberculous patients in every 10,000 inhabitants, which decreased in 1896 to 28, and rose again in 1901 to 35. This variation gave rise to the question whether the conditions of treatment were such as to enable physicians to cope successfully with tuberculosis as a national illness. The results of the so-called cures, especially those which involved reestablishment of strength for earning the living of the patient and somewhat protracted restoration of health are, according to the statistics of Englemann, very interesting. For example, out of 60,273 patients reported from 31 sources in Germany, among whom one-third were in the early stage of the disease, 56 per cent. had died or had reached a condition of total helplessness so far as earning their living was concerned. Englemann concludes that these results may be made better and would be made more satisfactory if the patients came earlier to the sanitariums, but even against this supposition the facts of his own statistics speak, for if after 3½ years only 44 per cent. of the patients are able to earn their own living, as a matter of fact, we do not know among these what the condition of their lungs may be. Moreover, common experience shows daily that many phthisical patients continue to follow their vocation up to the final stage of the disease; especially is this the case among those who leave some sanitarium with the suggestion strongly fixed in their minds that they were cured. There is, however, in the opinion of Katz, no doubt that the establishment of sanitariums has worked some good results, notwithstanding the fact that some of the cures were not altogether satisfactory. In the movement up to the present time, the importance of the climate seems to have been altogether belittled. This importance is of the degree formerly given it by physicians, namely, that it is not enough to send the patient away to some sanitarium or healthy locality for a few months, but to give him open-air occupation for a long time. In order to reach both of these purposes, these patients should be sent to a healthy, favorable climate, like that in German South or West Africa. Its geographical position and the great height of the land produces a rather constant dry, clear atmospheric condition, and thus resembles very closely the conditions found in the Transvaal, which has been used by the British for a long time for the same purpose.

W. Koerte, at the Society for Internal Medicine in Berlin, Jan. 12, 1903, read a paper on the Indications for Surgical Interference in Cholelithiasis and Cholecystitis. He stated that the surgical treatment of these conditions has been exaggerated, precisely as in other similar diseases. One group of surgeons wish to operate in every case, just as soon as symptoms arise, and the other group are prepared to wait, if anything, too long. From the basis of 300 cases of this disease he has drawn the following conclusions as to the proper time for operating: When there are no adhesions of the gall-bladder to the surroundings, the operation becomes easy, and its prognosis favorable. If, however, adhesions are present, this operation may become one of the most difficult. The dictum to operate in the early stages of the attack for every stone is, nevertheless, not justifiable, because there are many stones that never pass over into the second stage, namely, that of causing another violent inflammation. On the contrary they remain latent for years and sometimes up to the end of life never cause another attack of the disease. There are cases of gall-bladder colic, also, which do not belong at all to the stones themselves, because Naunyn has already shown that acute inflammation of the gall-bladder may cause precisely the same train of symptoms. Similarly, an acute infection of hydrops of the gall-bladder may lead to a similar clinical picture. In the third place, gall-stones which have for years been without symptoms may set up an acute attack when infection of the gall-passage is present. From these facts is it obvious that one should operate, not on account of the diagnosis, but on account of the kind and degree of inflammation present. Another point is the question whether the operation will guarantee freedom from symptoms. The answer to this question is not at all easy. Late symptoms may follow in the form of a true relapse and renewal of the stones, in the same manner as they were originally, which is not a common occurrence or they may arise from a small piece of stone left at the first operation, which even the most skillful operator may overlook. Finally, the symptoms may be caused by adhesions. The author handles these cases in the following way: If the seizure is light in degree, rather chronic in type and without severe infection, and with only a mild jaundice, he does not do the operation. If the case is, however, relapsed, or if the social condition of the patient demands a rapid return to his vocation, then he decides more readily upon an operation. In cases that, notwithstanding a competent and proper internal treatment, go on to a marked degree of the disease, he also operates, because in such individuals the possibility of late symptoms is less important than the condition of the present attack. If there remains a hard tumor between attacks, inflammation of the gall-bladder is to be feared, and the danger of a rupture of it or of a post infection of it is present. Absence of fever does not guarantee absence of pus, which is exactly the same phenomena as is seen in cases of perityphlitis. It is better to operate after the attack, except in those cases where the danger of perforation of the gall-bladder is to be feared. If there are stones in the bile-duct, operation is indicated without qualification, on account of the danger of cholaemia and abcess of the liver. He usually waits in such cases, unless urgent indications are to the contrary, six weeks after the attack; if at that time the jaundice has not disappeared, he again operates. In cases of gall-stones complicated with carcinoma of the gall-bladder, the prognosis is decidedly unfavorable, exactly as in patients with carcinoma of the head of the pancreas.

Reiche, at the Physicians' Society in Hamburg, Jan. 13, 1903, read a paper on the Value of Parental Infection in Phthisis. The supposition that heredity exercises a dominating influence in phthisis has less support through the slow and steady decrease in the frequency of tuberculosis, which has been easily established in all civilized lands during the past ten years. The majority of tuberculous cases develop and are established during that period of life when marriages occur and children are born. It is therefore astonishing that the record of this disease is slowly decreasing. The material of this author is the following: Of 3,022 cases of phthisis which were investigated in the last year, 2,476 were able to give satisfactory information about their parents. Consumption in the parents was present in 33 per cent., practically one-third of all the patients among the men 28 per cent. and among the women 44 per cent. Of these, the father was afflicted in 55 per cent. and the mother in 33 per cent., and both parents in 12 per cent. Among 2,450 individuals who, after examination, could not be pronounced tuberculous, but who belonged to the same period of life and had the same conditions of occupation, only 16 per cent. later proved to have the disease. These figures correspond with the figures of other authorities so accurately that they should be regarded as a basis of consideration. There is therefore no doubt that the children of parents who are tuberculous fall victims to the disease in very large numbers. The doubt arises, however, that it is not so much a matter of increased disposition to the disease, but rather a pronounced and continued exposure to it.

THE LATE DR. THOMAS.

To the Editor of the Medical News:

Dear Sir: Many have most kind recollections of the great surgeon and physician, Professor T. G. Thomas. He has done a great and beautiful work. His whole practice has been marked by scientific principles, broad comprehension, and high and noble purposes. His book on Diseases of Women is a standard work, and one of the best that has been written on the subject.

It has been my privilege to consult Dr. Thomas in many cases. His excellent judgment and clear discrimination helped in any emergency. Once a patient of mine in Brooklyn had most fearful hemorrhages, apparently she was near death. An eminent surgeon had been in consultation with me; he said it was cancer, and the history of the case would be repeated hemorrhages till she died. "But, Doctor," said I, "I saw a vesicle, it is surely fungoid growths." I could not stand still, late that Saturday night, then past eleven o'clock. I sent for Dr. Thomas. He came, and after careful investigation he came to the conclusion on which he was ready to stand: agreeing cordially with me that it was fungoid growths. The uterus was curetted, hemorrhages ceased, and in a few days the woman was well, and is still living. I could tell of many cases where I have found his excellent judgment a help. Dr. T. G. Thomas has been a blessing to all, to physicians, and to patients. I only repeat the sentiment of many, that a good man, and a great surgeon, has gone from our midst.

Mary Dixon Jones.

New York, March 12, 1903.

SOCIETY PROCEEDINGS.

THE NEW YORK ACADEMY OF MEDICINE.

SECTION ON GENITO-URINARY SURGERY.

Stated Meeting, held February 18, 1903.

John Van der Poel, M.D., in the Chair.

Nephrectomy for Calculus.—Dr. F. Tilden Brown presented a man, thirty-nine years old, a native of England, a clothing cutter, who was seen October, 1902. Family history negative. Personal history, negative except for gonorrhea fifteen years ago. About five years ago, albumin and pus were found in his urine, and he was told that his kidneys were diseased. He had no symptoms other than an occasional dull pain across his lumbar region, which he attributed to "catching cold." Four years ago while standing at work by an open window he had a severe pain in the right loin, which continued with varying intensity for three days, when he went to bed for two weeks. Felt feverish, but had no chills, vomiting or urinary symptoms. On recovering, worked regularly for a year, when he had a second attack lasting ten days. On this occasion the pain radiated to the bladder and right testicle, which swelled and was tender for several days. Then a period of six months before the third attack. After this the attacks became more frequent, and during the past eight months he has averaged one monthly, of varying severity. These have caused much loss of time at work, and he has been growing weak and losing flesh. On admission to the Presbyterian Hospital Dec. 11, 1902, he appeared poorly nourished, anemic. Thoracic organs negative. Abdomen—lean walls resist deep palpation, especially on right side, where this elicits tenderness, and there is a distinct sense of fulness. Temperature 99° F., pulse 90. Leucocytosis 9,000. Urine very turbid, acid; sp. gr. 1.015. Albumin, marked trace, urea two per cent., Indican, no excess. Total sediment almost wholly pus. Numerous bacilli resembling *Bacillus coli communis.*

Radiograph by Dr. Moseley showed a triangular shadow in region of right kidney base toward the spine. Suggested a calculus molded into a cast of the pelvis and some calyces.

With the presumption that a nephrectomy rather than a nephrolithotomy offered the best outlook for the patient further knowledge of the condition of the other kidney was clearly indicated. To secure this synchronous catheterization of the ureters was performed and gave from the right kidney: Four c.cm. in 16 minutes, reaction alkaline, albumin considerable, urea four per cent., blood, some cells, considerable pus, few hyaline casts, large bacilli bacteria, no tubercle bacilli; from the left kidney: Twenty-four c.cm. in 16 minutes, acid reaction, trace of albumin, six per cent. urea, no blood, small amount pus, few hyaline casts, large bacilli, no tubercle bacilli.

Cultures from bladder, right and left ureters, all gave growths resembling *Bacillus coli communis,* which gave Widal reaction, but did not coagulate milk or produce gas. Thus, while the right kidney was proven to be nearly functionless, the left was not free from infection.

On Dec. 15 under gas and ether anesthesia, an oblique lumbar retroperitoneal exposure of the right kidney was made. The organ was found to be very large, and with most of its surface tensely cystic. The fatty tunic had become in many places fibrous. The upper pole was at a high level and difficult of detachment. Through the tissues of the renal pelvis a calculus could be felt. To ligate the pedicle it was found necessary to diminish the size of the organ by evacuation of several of the large pyonephrotic sacculations, when with semicollapsed walls the presence and branched form of the stone could be felt through the kidney; the ureter and vessels were ligated with chromic gut and the kidney removed without exposing the stone. Most of the parietal wound was closed in layers by chromic gut, a small cigarette drain being left in upper angle. The patient was in considerable shock after the operation, and two hours later received an intravenous salt infusion to which he responded well. For two days the temperature reached 101° F., then fell to normal, and so remained. The wound healed by primary union. There was no discharge until the fifteenth day, when a quite copious watery discharge of distinctly urinous odor appeared. To counteract by gravity this undoubted leakage of urine from the severed ureter, the patient was allowed to get up the following day. The small opening left for drainage in the upper angle closed in rapidly with only an occasional indication of a slight recurrence of this reverse ureteric leakage from the bladder. He left the hospital on Jan. 10, 1903. At the present time the urine is perfectly clear, acid, sp. gr. 1.023, no trace of albumin. Since the urine is of a much better quality than was the urine obtained by catheter from the left kidney before operation, it must be inferred that removal of the diseased organ has been instrumental in effecting this benefit. In regard to leakage from the ligated ureter, it is probable that such an occurrence is unlikely to occur, even with slipping or early absorption of the ligation, when the sphincter and tissues bounding the uterovesical mouth are normal. Nevertheless it seems to the writer that greater precautions to secure permanent occlusion of the ureter may well be taken in all cases than has hitherto been his custom. For in cases of nephrectomy for tuberculosis even a minimal leakage of this sort may be attended with a serious fresh inflammation of tuberculosis in the retroperitoneal tissues. He would suggest that either a long curved and blunt syringe tip by which several minims of a strong carbolic acid solution could be deposited upon the mucous surface of the ureter for an inch or so below the severed end, and before the ligature is secured, or also, that a fine-pointed cautery be used for the same purpose. In this way an occlusion of the lumen of the mucosa will result independent of what the temporary ligation may accomplish, and the ligated stump be disinfected at the same time.

The calculus, which was firmly imbedded in pelvis, and two of the upper calices, weighed ten grams, and consisted chiefly of uric acid, with a moderate oxalate of lime admixture.

Case of Nephrolithotomy.—Dr. Brown also presented this patient, a man twenty-eight years old, white, American, by trade a cooper. First seen Dec. 29, 1902. Family history negative, uses alcohol and tobacco in moderate quantity. Usual diseases of childhood, good recoveries. Gonorrhea ten years ago, cured in four months. Never received any injuries involving the trunk.

About seven years ago patient began to experience sudden sharp pain in the right side radiating across the abdomen, down the right thigh and into right testicle. These were felt at intervals varying from three or four days to eight months. Sometimes accompanied by chilly sensations, slight fever and vomiting. The attacks lasted from a few minutes to several hours. About four years ago, after a very severe paroxysm, he entered a hospital and was observed by both medical and surgical staff without a diagnosis. Five weeks later he returned to work, but had soon to give up on account of the frequent recurrence of the former sort of attacks. Three years ago he entered another hospital for what was diagnosed as appendicitis. One month after appendectomy he was discharged cured. On reaching home the old attacks began again. Patient reentered the hospital again with his physician's diagnosis of renal calculus, but this was not concurred in by the surgeon, and he was discharged. For the past year attacks have been increasing in frequency and severity, and have often been followed by bloody urine. On one occasion, he claims to have passed three or four ounces of pure bright blood. He has never noticed any long worm-shaped clots corresponding to ureteral casts. Nor has he ever seen any urinary gravel. Two months ago Dr. E. G. Janeway diagnosed renal stone. A few days after Mr. Caldwell took an excellent radiograph showing a small but well-defined shadow in the region of the right kidney. He entered my service in Bellevue Hospital for operation on Dec. 29, 1902, complaining of considerable general soreness since the last acute attack a few days ago. On palpation neither kidney could be felt, but the lumbar and abdominal boundaries of the right kidney were very tender. Urine examination Jan. 2 gave a clear, pale-yellow alkaline. Sp. gr. 1.018, no albumin, no sugar. Microscopical examination showed phosphates in excess, no blood or pus. On Jan. 4 patient had a sharp attack of pain in the right side, and a few hours later passed several ounces of blood-stained urine. Under ether anesthesia, Jan. 9, the right kidney was exposed by an oblique lumbar incision; in a few places the adipose capsule was unusually adherent to the fibrous capsule. An accessory artery going to the upper pole was clamped and tied before drawing the kidney out of the wound. Palpation of the organ, its pelvis and upper part of the ureter, both before and after delivery of the organ, upon the loin failed to detect the slightest suggestion of the presence of a calculus. A small slit was made in the ureter at its junction with the pelvis, and a long flexible ureter catheter passed to the bladder. This slit was subsequently closed by chromic gut sutures. The fibrous capsule was then cut at a point a little posterior to an intersection of the vertical and transverse planes, and blunt pointed scissors advanced into the pelvis. A curved artery clamp was then substituted the better to reach into the several accessible calices. On turning the point toward a calix well in the upper pole of the kidney a stone was detected. The forceps were replaced by the finger, which, after some little difficulty, dislodged the body from its quite firm imbedment, and it was brought out in a small scoop. Sharp bleeding followed from the kidney wound. Three or four catgut sutures were used to coapt the kidney laceration at different levels, and the organ was replaced. A small but long cigarette drain was placed at the posterior surface of the kidney to serve as a lead for subsequent urine and blood oozing. The parietal wound was closed in layers with chromic gut, except at the upper extremity. Thick dressings to provide for urine leaking were applied. Patient returned to ward in good condition. Blood stained dressings with much urine admixture were changed daily for five days. During same time the urine voluntarily voided by bladder was heavily charged with blood. After the sixth day, when cigarette drain was removed, the issuance of urine by the loin rapidly lessened. The stone weighed 0.564 gram, was the shape of small lima bean and consisted of calcium oxalate with slight organic admixture.

Dr. Eugene Fuller said that no doubt the X-ray had been of great value in making a diagnosis of the cases reported by Dr. Brown, but we should remember that sometimes, in stone cases, the X-ray will give negative results even when the shadows are well taken. Some time ago he had removed from a bladder seventeen faceted stones, the mass being about the size of a hen's egg. An X-ray had been taken in this case, and the patient had been informed that he had no stone, because there was no shadow as the result of the X-ray. Obtaining a shadow in these stone cases greatly aids in the diagnosis, but the surgeon should be on his guard against positively asserting that no stone exists, because no shadow has been revealed in an X-ray picture.

Dr. Van der Poel believed that distinct advances had been made in the obtaining of X-ray pictures, giving more definite conclusions, during the past five or six months. Although he was not personally very conversant with radiography, yet Dr. Alexander B. Johnson had showed that there was a great deal of difference with regard to the manner of taking the radiograph, as to placing the plates, and upon the technic often depended the obtaining of positive or negative results.

Torsion of the Spermatic Cord.—Dr. Eugene Fuller gave the history of a man, thirty-five years old, who during the last four years had had such attacks, sometimes three times a year, and sometimes as many as five or six. These attacks came on suddenly, and were accompanied by so much pain in connection with the right testicle that he was compelled to take to his bed, lying perfectly flat, with hips elevated, applying sometimes cold and sometimes hot applications. With each attack the right testicle swelled. Upon examination nothing appeared to be abnormal. He had been examined by several men and all pronounced him perfectly healthy. He had another attack in his hotel and Dr. Fuller was sent for. The doctor found him lying flat upon his back and, upon examination, the right testicle had rotated and become extremely tender. Upon rotating the testicle so as to increase the torsion, the pain was augmented; rotating it the other way gave him relief. Two and a half rotations represented a degree of torsion. The case was very interesting, and was analogous to the one Dr. John Van der Poel reported in 1895. Nicholodane reported the first instance of complete rotation with strangulation of the testicle in 1885. In most cases where complete strangulation of the testicle had existed the diagnosis had first been made when an operation for supposed strangulated hernia had been undertaken, a gangrenous testicle being found instead. In 1893 Nash was called to see a boy who had been playing football, and he noted the condition of the testicle before gangrene had set in. He untwisted the torsion. That was the first case reported where relief by so doing had been effected. In this case the twist was so acute that gangrene would probably have followed. In neither of the cases of Dr. Fuller or Dr. Van der Poel would gangrene have followed.

An Illustration of the Reckless Manner in which the Testes have been Removed for Relief of Prostatic Symptoms.—Dr. Eugene Fuller related the instance of a patient, thirty-seven years old, who had suffered two years previously from castration, which was undertaken for the relief of prostatic hypertrophy, when really he was suffering from an extensive false passage which extended from the floor of the membranous urethra down anterior to the prostate, and between that gland and the rectum. The cavity formed by this false passage was very extensive, and lined with granulation tissue. A perineal section was performed, and the line of the false passage laid open, after which the cavity was curetted and packed with gauze, a cure resulting.

Tuberculous Epididymitis of Special Interest as Regards Treatment.—Dr. Eugene Fuller reported the case of a man, about thirty years old, apparently in good general health, who came to the clinic at the

Post-Graduate Hospital complaining of so much pain in the left testicle that he was unable to work. He denied the history of gonorrhea. Examination showed in connection with the globus minor of the left epididymis a very hard nodule, the size of a small marble. The nodule was not painful on manipulation. The surrounding tissues were non-adherent, and there was no involvement of the rest of the genito-urinary tract. The question arose what to do for the man. It seemed incredible that he should suffer so much pain. It was decided to place him in a ward and take out the mass. This was done, and the mass was proven to be tuberculous, and to consist of a pyocele with thick, firm walls. The tuberculous abscess was dissected out and removed; its fluid contents were found to be in a state of great pressure, thus accounting for the pain of which the patient complained. The confined pus would, of course, after a time have broken through the walls of the nodule and infiltrated into the surrounding tissues, giving spontaneous relief to the pain. The existence of the great pain made the case an interesting one. If the man had not been a laborer, and so forced to get back quickly to work, Dr. Fuller would not have felt called upon to operate so precipitately. In most such instances, presenting similar nodules, resolution follows expectant treatment; no operation being required.

Dr. Van der Poel said that the case reported by him in 1895 (*Med. Record,* Vol. 47, No. 24) was very similar to that of Dr. Fuller. The patient was a young physician, twenty-five years old, who gave the following history: His father, also a physician, had told him that his right testis was undescended at birth, but had come down to beyond the external ring by the time he was two years of age. When twenty-two years of age he experienced an acute pain in the right testicle, coming on suddenly, without apparent cause (strain or exertion). The suffering was so intense that he was obliged to assume a recumbent position, when hot applications were made without relief, but after "holding it up" toward the ring, for about a half hour, the pain gradually ceased. From this time on, for three years, attacks came on with varying frequency, from twice in one night on two occasions, to once in six months. When twice in one night, it is probable that the twist was not entirely released at the first attack. When not understanding the nature of the trouble, relief was obtained by "pulling, or stroking the cord upward," evidently relieving the tension sufficiently to allow the cord to untwist to a certain extent. Most of the attacks, however, came on when up and about, and when the probable nature of the trouble was explained to him, after several trials to ascertain the direction of the twist, relief was obtained usually in about two minutes. Two full turns were made, from within outward, before the testicle apparently resumed its normal position, and the pain ceased, the torsion being from without inward. When Dr. Van der Poel first saw him he had not had an attack for six months. Upon examination, the right testicle was found well drawn up toward the upper part of the scrotum, while the left was unusually low. Three half-turns of the testis could easily be made, without any pain or discomfort whatever, but on another quarter-turn (one and three-quarter full turns) there was pain accompanied by swelling of the veins of the cord, and if the testis was left to itself, it would remain in this position, but could be readily untwisted. Upon the same side was an incomplete inguinal hernia of small size.

The majority of these cases appear to have occurred upon the right side, and, as in this case, with the testicle rather high in the scrotum, in fact, no case has been recorded with a low testis. The twists have mostly been where mentioned, from without inward. The degree of torsion necessary for strangulation has varied from one-half turn (in Keen's and Nash's cases) to two full turns in this case, and in one other, as far as I am aware. The anatomical explanation of these torsions lies in the fact that the usual fixation of the testicle by a peritoneal reflex, or mesorchium, is either absent, or but slight, so that the testis hangs as it were, on a pedicle, which at any rate is not fixed for some distance, the peritoneal reflex always being present.

Dr. J. A. Bodine had had one experience in a case of torsion of the spermatic cord, in which the cause was definitely known. It was produced by the ordinary traction employed for holding up the cord in performing a Bassini operation by strips of gauze. The cord so held up became twisted on its long axis, and was replaced in a condition of torsion. Pain occurred within 48 or 72 hours, and relief followed the untwisting of the cord.

A Case in which both Testes Passed into the Scrotum through One Inguinal Canal.—Dr. A. A. Berg presented this patient. (This paper will appear in a subsequent issue of the MEDICAL NEWS.)

Pneumococcus Infection of both Tunicæ Vaginales, with Metastatic Infection of Retzius' Space.—Dr. A. A. Berg reported the clinical history of a patient with bilateral empyema of tunica vaginales, due to the pneumococcus of Friedlander, with secondary abscess in the cellular tissue behind the bladder, burrowing up through the left inguinal canal, and emerging at left of external ring. The case was reported as an instance of what seemed to be a primary infection of both tunicæ vaginales by the bacillus of Friedländer. Although the urine contained some pus cells there were no clinical evidences of a cystitis. As to how he was to interpret the abscess around the left seminal vesicle, that finally made its way up along the vas, and pointed at the external ring, was an open question. The left epididymis was involved by continuity in the suppurative process; the infection may have passed up the vas, and become localized around the seminal vesicle, and then burrowed upward along the vas; or the infection around the vesicle may have been a metastatic one; or, finally, it may have been carried to the vesicle by the lymphatics of the cord. This case will be published *in extenso,* with bacteriological findings, later.

Case for Diagnosis.—Dr. R. J. Litsit presented a man, twenty-nine years old, a sailor. Family history very good. He never had gonorrhea. He had never been sick. In 1897 he contracted an ulcer on his penis. after a period of incubation of about six days. The ulcer persisted for about one month and, according to the patient's statement, became indurated. The whole penis became greatly swollen four days after the ulcer appeared, and buboes formed on either side. The swelling and buboes disappeared after twelve days. Nitrate of silver was applied to the ulcer; this was followed by iodoform application. Fifteen days after the ulcer appeared a rash came out on chest, thighs and arms. This remained for thirty days and then disappeared. Eight days after the rash appeared the patient had a sore throat which lasted about one month. His physician pronounced it a case of syphilis and inunctions of mercury and some medicine which tasted bitter and salty, was administered. One year after the appearance of the ulcer the testicles began to enlarge and became very hard. A sinus appeared the last week in December. No pain was ever experienced. The prostate was normal. The doctor first saw him February 1, and the patient was given 7½ grains of iodide of potassium three times a day, and inunctions of mercury, 15 grains daily.

Dr. B. Lapowski said that the diagnosis of the case was written upon the skin. The presence of a tubercular serpiginous syphilide above the right knee excluded all doubt as to the character of the disease of the testicles. The unsatisfactory results from the administration of iodide of potassium were rather due to the small doses. He said that larger doses, 25 or 30 drops of a saturated solution of iodide of potassium, given three times a day, together with a series of mercurial inunctions, would quickly reduce the size of the affected testicles.

Improvement on Levis' Carbolic Treatment for Hydrocele, with Cases.—Dr. J. A. Bodine said that the feature that he had added to the Levis method, which he considered an improvement, consisted in running a stream of salt solution through the hydrocele sac, until the escaping fluid contained no albumin. The sac was then free from hydrocele fluid and the inner layer of the tunica vaginalis was mechanically cleansed of its albuminous coating, permitting the carbolic acid to come in contact with the lining endothelium. The faults in the Levis method were (1) the sac could not be completely emptied of hydrocele fluid with the trocar and canula at present used. An amount of fluid equal in greatest depth to the length of the end of the canula projecting into the sac will remain. (2) The chemical incompatibility between carbolic acid and albumin in solution. So sensitive was this reaction that it was used in pharmacy as a differential test between carbolic acid and creosote. Hydrocele fluid and carbolic acid formed a thick, yellowish-white coagulum. Therefore, it was necessary to remove all the hydrocele fluid before the carbolic acid could exercise its full curative or caustic effect upon diseased membranes. He showed a trocar and canula devised by Dr. Frederick Griffith, which made easy this mechanical cleansing of the hydrocele sac. It consisted of a trocar sufficiently long to accommodate two canulæ. The lower canula had a slit which was important in completely recovering the salt solution. A spot at lowest level of the tumor was cocainized, and the trocar introduced. Its point was guided in front of testicle to a spot previously cocainized at the upper pole of tumor and pushed through. The trocar was withdrawn, leaving the two canulæ in position. The rubber tube of an irrigator containing warm salt solution was attached to the lower canula, the fluid permitted to escape from the upper. At periods some of the escaping fluid was caught in a test-tube and tested for albumin. In some cases as much as a half gallon of salt solution passed through the sac before it was entirely cleansed of albumin. The irrigation was stopped and the sac completely emptied of the salt solution. From one to two drams of Calvert's liquefied crystals of carbolic acid were introduced through the lower canula by means of an ordinary hypodermic syringe and a small connecting piece of rubber tubing. The sac should then be so manipulated as to bring the acid in contact with all parts of the tunica vaginalis. The salt solution was again connected with the lower canula, and the stream continued until the escaping fluid contained no trace of carbolic acid. This was readily tested by adding some of the hydrocele fluid reserved for this purpose. If carbolic acid was present coagulation occurred. Lastly, the sac was completely emptied of salt solution, the canulæ withdrawn and the punctures sealed with collodion. As the curative effect of carbolic acid on the endothelial lining is instantaneous upon its application, there was no advantage in leaving any excess of acid in the sac. If the sac is free from fluid, carbolic acid could not produce intoxication, because it could not be absorbed. Diluted carbolic acid is a more dangerous application than the acid in its full strength. The one can be absorbed, but the other coagulated and sealed up the mouths of the lymphatics, thus automatically obstructing its distribution. During the past year he had used this method on nine selected cases, five of which he had been able to trace up to the present report cured.

Dr. Wm. B. Coley thought the method described by Dr. Bodine a very ingenious one. He called the attention of the Section to a method which he had brought before the Surgical Society by which he had treated 55 cases at the Hospital for Ruptured and Crippled. This was a far simpler method, and consisted of a double canula, a smaller one which fitted in a larger one, the latter being used as a trocar. The scrotum was so manipulated that every drop of fluid was expelled. Two drops of Schering's pure carbolic acid was introduced, and the scrotum so manipulated that they were well spread about over the endothelial surface. Although two drops of the acid seemed to be a very small amount, yet, in his experience, it was sufficient to cure. In one of his cases, a man sixty-two years old, the hydrocele had existed for 40 years and contained eight ounces. He had been frequently tapped. He was cured by one injection of only 2½ minims of Schering's carbolic acid, and had now been well for two years. The majority of the cases required but one or two injections.

Tumors of the Testis.—This paper was read by Dr. William B. Coley. The writer stated that he had observed 18 cases of tumor of the testis, of which 17 were sarcoma and one teratoma. He said that, contrary to the opinion of Butlin, it occurred frequently in young adult life, more than half of his own cases being between 20 and 30 years of age. With reference to the etiology, it was his belief that trauma played a very important part. In about 50 per cent. of his cases there was a distinct history of antecedent injury. In some of these cases the tumor developed so quickly after the injury that there could be no question as to the etiological significance of the trauma. He also referred to the very complete statistics of Kober (*Amer. Journal of the Medical Sciences*, 1899, Vol. 117, p. 35) covering a series of 105 cases of sarcoma of the testis collected from the literature, in which there was a history of antecedent injury in 43 per cent. of the cases. In all of his cases the type of tumor was round-celled sarcoma. As regards the diagnosis, he said that, as a rule, it was not difficult to differentiate malignant tumor of the testis from other diseases, the condition most closely simulating it being tuberculosis of the testis. Yet, in most instances, a careful study of the clinical history and physical characteristics made the diagnosis clear. A history of short duration of the trouble, antecedent injury, smooth symmetrical enlargement, absence of involvement of the skin, no enlargement of the cord, with no family history of tuberculosis or evidence of tuberculous disease in other parts of the body, he stated, would usually permit one to make the diagnosis of sarcoma.

The writer mentioned one case in which all of these positive signs were present, and yet the diagnosis of tuberculosis was made solely on the ground of the varying consistence of the tumor. The testis was removed and proved to be tuberculous. With regard to the prognosis, he never had seen a case of malignant disease of the testis recover under any method of treatment. Kober's statistics, comprising 105 cases, however, show that nine remained free from recurrence from 3 to 15 years, giving a percentage of cures of 8.5 per cent., being a lower rate than in almost any other variety of sarcoma, except periosteal sarcoma of the femur. In most cases the duration of the disease is comparatively short; in 71 of Kober's cases it was less than two years; in 28 from a few weeks to six months. In only one-fourth of the writer's own cases was the patient seen in the early stages of the disease, the remainder having been treated for recurrence at varying periods after castration.

As to treatment, he strongly advised very early operation with complete removal of the testis and cord as high up as the internal ring. He thought that the only hope of better results rests upon earlier diagnosis, and he condemned the practice of delaying for weeks or months while trying the effects of mercurial ointment or iodides, as is so frequently advocated by text-books and surgeons. He stated that in the great majority of cases the diagnosis could be made in the early stages; and in cases of doubt, in view of the great dangers of delay, he advised early exploratory operation with section of the tumor and castration if the suspicions of malignant disease were confirmed. The patient with teratoma, whom the writer operated upon 2½ years before, was still in good health, and was shown before the Society. He stated that while pathologists are inclined to classify this variety as a benign growth, not infrequently recurrence and metastases do occur.

Dr. John F. Erdmann referred to the work of Dr. John B. Roberts, of Philadelphia, who stated in a paper upon this subject that he advocated the removal of the glands along the iliac vessels, making a very extensive operation, even requiring a secondary median incision in the abdominal cavity as being necessary to the removal of the growth.

Dr. A. A. Berg wished to emphasize two points (1) the presence of glands associated with sarcomata, and (2) the fact of the great malignancy of tumors of the testes. He remembered five cases operated upon at the Mt. Sinai Hospital during the last three years, and all died. The operations were very extensive, the inguinal canal being opened, the inguinal and femoral glands being removed, etc. In two cases recurrences took place before the patients left the hospital.

Dr. B. Lapowski said he would refer only to the points mentioned by the reader. In cases of tuberculosis of the testis, where the other genito-urinary organs were visibly and palpably normal, an examination of the semen may sometimes reveal the presence of the tubercle bacilli, and thus give a valuable hint in regard to the diagnosis.

As to the writer's statement that he condemns the application of specific treatment advocated by writers in doubtful cases of tumors of the testicles on account of the loss of time for surgical action, so valuable in cases of malignant tumors, his condemnation could hardly be accepted. In many cases there was absolutely nothing of a characteristic nature which could guide the physician in his diagnosis, neither the presence of previous history, nor the aspect of the tumor, which would entitle him to any positive conclusion. If in such cases the physician would act upon the writer's advice, he would often remove testicles which could surely be saved by an antisyphilitic treatment. Cases of such malignancy as mentioned are of very rare occurrence and, in such cases, even an early operation was hardly ever followed by a permanent cure.

Dr. Wm. B. Coley said that he did not mean to say that he advised amputating doubtful tumors of the testes. In cases of doubt, careful clinical methods of diagnosis should be employed to make the nature of the growth fairly certain without an exploratory operation. Incision into the testes must certainly clear up the diagnosis and make unnecessary the removal of the testes unless we are practically certain that they are malignant. In the cases shown this evening of syphilitic testes, the long duration, the absence of any history of injury, and the characteristic physical signs, were so clear, that he did not see how they would be mistaken for sarcoma.

With regard to the question of trauma he thought it might be explained as one explained it in connection with tuberculosis. A child may fall and injure his knee, and there develops a tuberculosis of the knee. The trauma caused a lowering of the resisting power in that locality, giving a favorable nidus for the tubercle bacillus to develop. This probably holds true in the development of malignant disease.

SOCIETY OF ALUMNI OF BELLEVUE HOSPITAL.

Stated Meeting, held March 4, 1903.

The Vice-President, John F. Erdmann, M.D., in the Chair.

The Treatment of Itching.—Dr. E. B. Bronson presented a paper on this subject. He said that two facts in the pathogenesis of itching were to be considered: hyperesthesia and the surcharge of nervous excitement. In a large proportion of cases the treatment must be based upon general principles. It was natural for every animal to attempt to relieve itching by scratching. How was this relief brought about? The act of scratching tended to divert the engorgement of the skin into other channels, and for the instant the accumulated nerve excitement was dissipated. However, the resulting hyperemia would probably do more than offset the temporary diversion which the scratching afforded, and, as a result, the nervous excitement was increased. It was possible to secure the same amount of relief in safer ways. All irritating contacts should be scrupulously avoided, such as from coarse clothing, excessive dryness or scaliness of the skin, sudden changes of temperature. Ichthyol, resorcin, tar, benzoin and sulphur preparations would relieve the hyperemia, and had a decidedly healing effect on catarrhal inflammation, but they were not true antipruritics. Firm pressure on the itching surface would sometimes give almost as much relief as would scratching. Vinegar lotion, lemon juice, cologne water, camphor and chloroform in various solutions all acted in this way by producing more or less stinging or smarting of the skin, thus substituting a more definite sensation for the vague one of itching. Menthol relieved itching as it relieved pain by substituting for these sensations a disturbance of the temperature sense, and producing a sensation of cold. This drug might be used in ointment, in oily solution or as a dusting powder, but it was most effective in two-per-cent. alcoholic solution. It could be used very freely if there was not too much inflammation. Thymol and chloroform were useful adjuvants, particularly in urticaria. Hot water, when applied for a certain length of time, was decidedly sedative, and was especially useful in itching of the genitals. He had not found the use of opium, belladonna, stramonium and others of the same class of much benefit. The action of cocaine and of orthoform on the intact epidermis was nil. Tannic acid was useful when used in connection with menthol. It was the property of certain antiseptics, such as carbolic acid and mercuric chloride to retard vital action. The concentrated solutions of these substances produced decided anesthesia of the skin. Of all local antipruritics carbolic acid was the most reliable, and had the most lasting effect. The danger of absorption and carbolic acid poisoning was not very great, if ordinary caution were exercised. The danger of injury to the skin from its corrosive action was greater. This action could be neutralized to some extent by the addition of alcohol, but he had found linseed oil the best corrigent. The following prescription was well adapted for use over limited areas of pruritus, but should not be used oftener than once a day: Liquor potassæ, one dram; carbolic acid, two drams; linseed oil, one ounce; oil of verbena, two minims. The best time to apply it was at night.

Aside from general medication addressed to the special requirements of individual cases, there was not much to be said about internal medication in cases of pruritus. The condition could be temporarily relieved by narcotics, but when the narcosis passed off the itching was apt to be worse than before. Antipyrine had been used with some success in itching, but it must be employed in large doses, and it often gave rise to rashes. Such general sedatives as the bromides were often useful, and at times almost indispensable. In urticaria there was an indication for motor depressants to overcome the spastic contraction of the skin muscles. Atropine was a recognized remedy when given in large doses, but he would not often resort to it. The same was true of pilocarpine. In chronic toxic urticaria there was an indication for antiseptics, such as creosote and the salicylates. Where the urticaria followed an error of diet or the administration of some special drug speedy relief usually followed a brisk purgative.

In cases of senile pruritus associated with eczema the attention should be mainly directed to the eczema, but when there was no eczema harsher methods of treatment were indicated, such as vigorous rubbing of the skin, faradization with the metallic brush and the internal use of cannabis indica. Strychnine was also an appropriate remedy. For those subject to winter pruritus the diet should be carefully regulated, and the parts kept warmly clad. Points of excoriation should be carefully covered with some healing salve, and some soothing ointment, such as cold cream, should be used after the bath. Bath pruritus was hard to treat. A superfatted soap should be used in the bath, and after the bath the skin should be lightly dried with the softest towels.

In the localized forms of pruritus occurring about the anus the underlying constitutional conditions should be carefully sought for. When inflammation was also present this must first be controlled, and then a more efficient antipruritic used. Cocaine was sometimes indispensable when the itching was intense, but it was not a good remedy for prolonged use, and was only of value on the mucous membranes or on abraded surfaces. The same was true of orthoform. Applications of hot water were sometimes very beneficial, the temperature of the water being gradually raised to 110° F. The sovereign remedy was carbolic acid. A single application of the strong oil already mentioned would sometimes give complete relief for the entire night. The principal seat of the itching in these cases was just at the junction of the mucous membrane and skin, and the application should be confined to this portion. In the milder forms a five-per-cent. solution of menthol in oil or a watery solution of ichthyol, one dram to the ounce, would be found of benefit.

Dr. George W. Crary referred to a case in which marked pruritus ani was associated with, and was relieved by sexual orgasm, an excellent example of the substitution of voluptuous sensation for itching.

Dr. J. W. S. Gouley said that about eighteen years ago an old physician had told him that it was his practice to relieve the burning and itching sensation of acute erysipelas by the application of lemon juice and vinegar. The speaker said that he had accordingly suggested the use of a ten-per-cent. solution of glacial acetic acid on the erysipelas cases in Bellevue Hospital, and the reports from the internes extending over many years were to the effect that this application gave very marked relief in the majority of cases.

Dr. Bronson said it had never occurred to him that the vegetable acids acted chemically in the relief of pruritus, but rather as a means of substituting another sensation. Acids were sometimes used internally on the assumption that there was an excessive alkalinity of the blood, but it was more probable that the mineral acids employed in these cases acted by increasing metabolism.

Notes on the Selection of a Climate for the Treatment of Tuberculosis.—Dr. Russell Bellamy was the author of this paper. He said that there were one thousand hours less sunshine in New York city than in Denver, and 48 per cent. of sunshine as compared with 82 per cent. in Arizona. He believed a physician in this city erred when he attempted to treat here incipient cases of pulmonary tuberculosis which might be sent to a more suitable climate. The Adirondack region was made moist by the proximity of the valley of the St. Lawrence. The Saranac and Lake Placid regions were to be specially commended. Raybrook was also a good place, but was too near civilization. Asheville seemed to him overcrowded and possessed of comparatively little sunshine. El Paso, Texas, was becoming quite a popular resort for the winter, especially for cases of laryngeal tuberculosis. The ideal vantage ground was to be found in Colorado, New Mexico and Arizona. In Colorado was found the highest development of the Rocky Mountain peaks. The eastern part of the State was a vast plain with an average elevation of 4,500 feet. The northwestern part of Colorado was the land for boys and girls of fifteen or sixteen. In these "parks" the air was heavily impregnated with the vapors from the pine and spruce trees, and the air was delightful and invigorating in summer. This portion was now only accessible by pack trains. The elevation was from seven to eleven thousand feet. In the winter the precipitation was almost wholly in the form of snow, and this was apt to last into May. There were no fogs. Denver possessed a record of 42 per cent. of clear days, as against 27 per cent. for New York city. Colorado Springs, in the opinion of the speaker, offered the greatest advantages for the pulmonary invalid of any place in this country. The elevation was 6,022 feet. The population was 25,000, and the life there was most delightful, but the locality was more especially suited for those of considerable means. Manitou Springs, a nearby place, was not so good. New Mexico was generally mountainous to the Arizona line. The climate was generally temperate, and the rainfall occurred chiefly in July and August, the average being about 18 inches. The wind movement was less than in Colorado. The natives seemed to be entirely immune to consumption. The best part was the northern portion. The winter climate of Albuquerque was superb, but it was too hot in summer. The temperature during the winter was 45° F. at noon, while in summer it was rarely over 80° F. Silver City was at an altitude of 5,000 feet, and appeared to be particularly suitable for pulmonary invalids, except that the accommodations were rather crude. Las Vegas was also a good place. Phoenix and Tucson were the principal places in Arizona, a territory which appeared to him almost as monotonous as Egypt. There was a total absence of fog, and the sunshine was most brilliant. Elderly people and advanced cases of tuberculosis not already accustomed to high altitudes, should avoid great elevations.

Mr. H. T. Galpin, an expert chemist on the control, by artificial means, of climatic conditions, was asked to speak. He said that his work in governing temperature and humidity had taught him that New York was a most difficult place to manage in this respect. There was an annual mean last year of 53.5° F., and a maximum of 90°. The annual mean for humidity was 75.5 per cent., and per month, 82. He believed that electricity was the most useful means of generating ozone, and that the latter was one of the best purifiers of the atmosphere. He had devised an apparatus which gave three or four per cent. of ozone, and with this he was able to rapidly oxidize and purify any contaminated atmosphere. In almost all buildings, particularly fireproof ones, there was a constant dampness present, as shown by the fact that no highly polished and unprotected steel surfaces would remain long without rusting. The decomposition of water in the presence of the oxygen and nitrogen of the contaminated atmosphere of offices and dwelling houses resulted in the formation of ammonia and carbon dioxide. When these were brought in contact with ozone they were rapidly oxidized, and the natural form of oxygen and nitrogen restored. If a constant temperature or humidity could be maintained the conditions thus obtained would be the best for the preservation of food products, and he believed the same was true with regard to the health of human beings. He had known of incipient cases of pulmonary tuberculosis in which the tubercle bacilli had been rapidly reduced in number by this method of purification of the atmosphere. When the atmosphere was dry and there was a good average temperature and humidity, and a good altitude, there was considerable electricity in the air, and also ozone, and these tended to keep the air in a state of purity. He had never been able to find ozone in the atmosphere of New York city, although he had had no difficulty in finding H_2S and other noxious gases. He had found the rainfall here in one year to be 58.68 inches, and this humidity of the atmosphere alone made it difficult to keep the air pure. The only accurate method of determining the humidity was by means of a sling cyclometer.

BOOK REVIEWS.

SPECTACLES AND EYEGLASSES, THEIR FORMS, MOUNTING AND PROPER ADJUSTMENT. By R. J. PHILLIPS, M.D., Ophthalmologist Presbyterian Orphanage, etc. Third Edition. Revised. With 52 Illustrations. P. Blakiston's Son & Co., Philadelphia.

THE matter and make-up of this little volume of 109 pages are good, and make of it a good working manual, justifying its reappearance in a third edition. Various kinds of information needed for the mechanical side of this work are got together here in compact, available form, without unnecessary detail. It is an essentially practical treatment of the subject without much reference to theory, though interest in the book is awakened by its historical setting in the introduction.

REGIONAL MINOR SURGERY. Describing the Treatment of those Conditions Daily Encountered by the General Practitioner. By GEORGE G. VAN SCHAICK. International Journal of Surgery Co., New York.

THE author of this book is correct in claiming that it is often the little things in surgery that go to distinguish the gifted operator from the bungler. Cosmetic results also bring credit. Failures to produce sightly members, or slight scars about the face, for example, are often a disgrace, and may become the basis of a civil suit.

As might be expected, such a book begins with the conditions of asepsis, and the essential, yet often neglected rules of suturing, and then takes up in careful series all of the surgical areas of the body, from the head to the rectum. A rather important branch of minor surgery, which might at any time embarrass the general practitioner, is the subject of foreign bodies in the genito-urinary system of the male and of the female. The frequency with which children, and even some adults, trifle with themselves makes it necessary that every practitioner should understand the best accepted methods for relieving these conditions. For the purpose which the book aims to reach it is certainly adequate. The plates, while not of a high order of individual execution, are clear and to the point, and serve throughout to add to an interesting book.

BOOKS RECEIVED.

The MEDICAL NEWS *acknowledges the receipt of the following new publications. Reviews of those possessing special interest for the readers of the* MEDICAL NEWS *will shortly appear.*

COMPEND DISEASES OF CHILDREN. By Dr. M. P. Hatfield. Third edition. 12mo, 241 pages.

INORGANIC CHEMISTRY SYLLABUS. By H. C. Carel. Third edition. 8vo, 182 pages. Minneapolis.

OBSTETRICS. By J. W. Williams. 8vo, 845 pages. Illustrated. D. Appleton, New York and London.

HOW TO SUCCEED IN THE PRACTICE OF MEDICINE. By Dr. Joseph McDowell Matthews. 8vo, 215 pages. Illustrated. John P. Morton & Company, Louisville.

ANATOMY OF THE PERITONEUM AND ABDOMEN. By Dr. Geo. S. Huntington. 8vo, 292 pages. Illustrated. Lea Brothers & Co., Philadelphia and New York.

MANUAL OF BACTERIOLOGY. By Drs. R. Muir and James Ritchie. American edition by N. M. Harris. 8vo, 564 pages. Illustrated. Macmillan & Co., New York.

PHYSIOLOGY. By Drs. T. G. Guenther and A. E. Guenther. 12mo, 255 pages. Illustrated. Lea Brothers & Co., New York and Philadelphia.

DISEASES OF METABOLISM, NUTRITION AND OBESITY. By Dr. C. v. Noorden. 12mo, 59 pages. NEPHRITIS. 112 pages. E. B. Treat & Co., New York.

AMERICAN YEAR-BOOK OF MEDICINE AND SURGERY. 8vo, 671 pages. Illustrated. W. B. Saunders & Co., New York, Philadelphia and London.

THERAPEUTICS OF INFANCY AND CHILDHOOD. By Dr. A. Jacobi. Third edition. 8vo, 560 pages. J. B. Lippincott Co., Philadelphia and London.

SURGICAL DISEASES OF THE KIDNEY AND URETER. By Dr. Henry Morris. 8vo. Two volumes. W. T. Keener & Co., Chicago.

OBSTETRICS. By Dr. W. P. Manton. 12mo, 265 pages. Illustrated. Lea Brothers & Co., New York and Philadelphia.

THE PRACTICAL MEDICINE SERIES. Vol. 3. EYE, EAR, NOSE AND THROAT. Dec., 1902. 12mo, 283 pages. Year Book Publishers. Chicago.

HEATH'S PRACTICAL ANATOMY. Edited by J. E. Lane. Ninth edition. 696 pages. Illustrated. P. Blakiston & Co., Philadelphia.

DISEASES OF THE SKIN. By Dr. H. Radcliffe Crocker. Third edition. 8vo, 1400 pages. Illustrated. P. Blakiston's Son & Co., Philadelphia.

THE INTERNAL SECRETIONS AND PRINCIPLES OF MEDICINE. By Dr. C. E. Sajous. Vol. I. 8vo, 800 pages. Illustrated. F. A. Davis Co., Philadelphia.

TEXT BOOK OF PRACTICAL MEDICINE. By Dr. W. G. Thompson. Second edition. 8vo, 1014 pages. Illustrated. Lea Brothers & Co., New York and Philadelphia.

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ORIGINAL ARTICLES.

SPINAL CONCUSSION, SO CALLED.*

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OF JACKSONVILLE, ILL.;
SURGEON TO PASSAVANT MEMORIAL HOSPITAL; OUR SAVIOUR'S HOSPITAL; THE CHICAGO & ALTON RY.; C. P. & ST. L. RY.; ETC., ETC.

WHILE the subject stated is "Spinal Injuries," it is really intended to confine the discussion to cases of so-called "concussion of the spine."

This paper is a continuation of the subject as presented to the Illinois State Medical Society, at its last meeting, at which time the histories, causes, pathology and treatment of 555 cases of concussion, sprain, fracture, dislocation, gunshot and stab injuries of the spine taken from recent literature were considered with especial effort to discover the true value of operative treatment of such cases. In going over the literature I was struck with the great number of cases which remained unclassified, and which were for the most part grouped under the term "concussion of the spine." This unclassified group seemed to contain every kind of spinal injury in which a positive diagnosis of fracture or dislocation could not be made.

Probably no question in surgery is subject to such diversified opinion as spinal concussion, so called. How a subject of such far-reaching importance to general practitioner, surgeon and neurologist has so long remained unclassified is difficult to understand. No injury, which the surgeon meets, affords more perplexing and embarrassing situations than these. Few injuries, especially in railway surgery, give more serious and annoying medico-legal complications.

Should the railway surgeon make a diagnosis of "concussion of the spine," and attempt to define the condition by quoting authors on the witness stand, it is altogether probable that the opposition could produce quite as many and competent authors as he, no matter what position he took. It was with a desire to find some solution in the present chaotic condition of the naming and description of this class of injuries that the present study was undertaken.

Definition.—Let us consider briefly the definition of concussion. Webster says concussion is "a condition of lowered functional activity without visible structural change, produced in an organ by a shock, as by a fall or blow."

The Century Dictionary defines concussion as: (1) The act of shaking or agitating, particularly by the stroke or impact of another body; (2) the state of being shaken; the shock occasioned by two bodies coming suddenly and violently into collision; shock; agitation; (3) in surgery, injury sustained by the brain or other viscera, as from a fall, a blow, etc."

The Standard Dictionary defines concussion as "The act of shaking violently, as by a sudden blow, or the state or result of being so shaken; shock; agitation, especially in surgery, a violent shock in some organ by a fall or a sudden blow; as the concussion of a shot."

Foster's Medical Dictionary defines "Spinal Concussion" as "A condition of the spinal cord produced by violent shock, such as may be caused by falling from a height, by a severe blow upon the back, or by a railway collision or similar accident. As complications, small extravasations of blood into the substance of the cord or rupture of nerve tissue may exist, also hemorrhage from the spinal meninges and subacute spinal meningitis caused by the initial injury. Paraplegia does not usually supervene. Paresis of one or more limbs, nausea, vomiting, a quick twitching and general prostration may severally or collectively occur. The temperature lowered after the accident may subsequently be found above the normal. Evidences of impaired digestion and assimilation are palpable. The effect upon the sphincters is variable. The degree and duration of general restlessness and nervous insomnia, as well as of the paralysis, depend upon the severity of the shock."

Let us look for a moment at the historical significance of the word "concussion." While this is not directly surgical, it may aid us in arriving at an understanding and correct use of the term.

The English Dictionary, On Historical Principles, by James A. Murray, defines concussion as "The action of violently shaking or agitating; particularly the shock of impact." As applied to surgery, Murray defines concussion as "An injury caused to the brain or spine, or other part, by the shock of a heavy blow, fall, etc."*

Thus we see that there is nothing in our best dictionaries, excepting that given by Foster, to support the use of the word "concussion" as descriptive of a special disorder of the brain or spine. In every other definition this word is used to describe the method by which the injury or disturbance was created.

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* Read before the Kansas City Meeting of the Mississippi Valley Medical Association.

* Definition Historically Considered.—" Looking at the word historically we see that in 1490, Caxton, Eneydos X. 39—Juno prayd the goddys of wyndes that Euryche—Sholde make concussyon and tormente in the ayer.

" 1541, R. Copeland, Guydon's Formul. U. I. V. Wounds or sores made with concussyons or strypes. R. Copland, Gavlen's Therapeutyke 2 A. 11 b. The solution of the Contynuyte called ecchymosis in greke commeth most often from concussyon and ruption.

" 1651, Hobbes, Leviath III, XLII 303. A concussion of the Heavens.

" 1656, Ridgley Pract. Physick, 68. Concussion of the brain is made from an external cause.

" 1760, tr. Juan & Ulloa's Voy. (1772) I VI. I. 306. This terriable concussion was general all over the province of Quito.

" 1803, Med. Jrul. IX. 177. The term concussion conveys not a precise idea of that derangment which is produced in the organization of the brain by external violence, on which account I have been induced to substitute that of contusion.

" 1825, J. Nicholson Operat. Mech. 647—Less liable to be broken by shocks or concussions.

" 1847, Smith tr. chelins Surg. I, 411. In concussion there is always gorging of the brain with blood.

" 1879, Harlan, Eyesight 11, 19. When the retina is irritated by the concussion of the violent blow—flashes of light—result.

" 1879, Carpenter. Ment. Phys., I, 11, 868 (1879) 72. The spinal cord must have been in a state of concussion."

We certainly could not accept Foster's definition as descriptive of a distinct disorder, as he plainly includes hemorrhage into and around the cord, rupture of nerve tissue, paresis and paralysis, as well as the general prostration and other symptoms usually described by various authors as concussion.

Let us look at a few definitions taken from recent works on surgery.

Cheyne and Burghard, in their work on "Surgical Treatment" say that "By the term concussion of the spine, is really meant a condition in which there is a molecular disturbance of the nerve cells, leading to temporary loss of functon without any actual lesion."

Park, in his work on Surgery, says of concussion, "We inherit the term concussion from the earlier masters of our art, by whom, however, it was used in a much broader sense than of late. Its modern significance was given to it by Boirel, who made it apply to a group of cerebral symptoms the result of injuries not accompanied by fracture of perceptible laceration of vessels—symptoms varying in intensity and duration." Park does not use the word concussion in connection with spinal injuries, but considers such injuries as contusions. He says, "The existence of contusion of the spinal cord has been questioned, but there is apparently no doubt that a severe lesion may take place in the cord without any external evidence of injury."

Opposed to the views of concussion given by Park, the following from "Albert's Surgical Diagnosis" is of interest, although it refers rather more to the brain than the spine: "The characteristic symptoms of concussion of the brain are evidently a transient condition of depression. If irritative symptoms arise, or the depression grows more profound, the condition no longer is one of uncomplicated concussion. Some other brain lesion then exists. One point requires emphasis. Loss of consciousness, no matter how transitory, must have been present if the condition is to be regarded as concussion. This, therefore, is the most distinctive sign, while slowing of the pulse is the objective symptom."

Thorburn in his classical work on "Surgery of the Spinal Cord" says: "'Concussion,' on the other hand, is used in the vaguest possible manner in the nosology of some writers apparently covering nearly all, if not all, the functional as well as some of the organic traumatic nervous lesions. The classical 'concussion of the brain' is a well-understood affection, representing almost certainly a definitely organic pathology, viz., intracerebral hemorrhages. To such cases it should, I believe, be restricted for the present, as its otherwise vague signification only obscures our views of many affections capable of much more accurate description."

It seems almost equally certain that concussion of the cord represents as definite an organic pathology as that of the brain; that, as a matter of fact, hemorrhage of the spinal cord is the basis of almost all the cases. The spinal cord is far less liable to injury than the brain on account of its greater protection.

Bailey, in his admirable work on "Accident and Injury," says: "In the chapter on injuries to the spinal cord it will be stated that there is still much doubt as to the existence of any such condition as concussion of that organ. The probability that head injuries may be followed by pronounced cerebral symptoms without there being any discernible lesions in the brain is very much stronger."

"As a designation for a pathological entity the term concussion or commotion of the spinal cord should be limited to such conditions as may occur as a result of injuries to the back, or of general concussion accidents, and which have not been caused by pressure from displaced fragments of the spinal column or by hemorrhage in the spinal canal or into the substance of the spinal cord. The time has gone by when intelligent physicians were deceived by the supposed resemblance between such general functional affections as hysteria or neurasthenia and concussion of the spinal cord."

The following from a new English work on "Surgery," by Rose and Carless, gives still a different definition of concussion: "This condition may be due to severe blows in the back, which do but little damage to the spinal column, or may be caused by accidents which lead to the infliction of greater mischief, but without any serious displacement of parts. The term 'concussion' should be limited to those cases where energetic traumatic influences (falls, blows, collisions, etc.) have given rise to severe disturbance of the functions of the cord without any considerable visible anatomical change in the latter (Erb). In fact, the term is really only applicable to those cases which recover more or less completely; if recovery does not ensue, minute extravasations or other lesions have been present, constituting a condition of contusion rather than concussion. It is somewhat doubtful, however, whether all these cases are not due to minute hemorrhages."

The following is from J. W. McDonald, on "Surgical Diagnosis and Treatment:" "Concussion of the spinal cord is a condition which probably never occurs, owing to the effective manner in which the cord is protected and steadied in the spinal canal. When injuries to the cord arise to which the term 'concussion' seems applicable the accident is probably a capillary hemorrhage, a laceration of the cord, or a vasomotor disturbance with exudation of serum. The symptoms of so-called concussion are those of shock—viz., pallor, nausea and vomiting, syncope, cold perspiration, etc. The symptoms which point to the spine as the cause of the shock are numbness, tingling or even paralysis of the upper or lower limbs, and constriction of the chest. The treatment is absolute rest."

Again I quote from Herrick's "Railway Surgery:" "The theory that concussion of the spine with consequent injury to its cord can occur is an untenable one. Protected and suspended, as it is, surrounded by layers of soft membranes and nearly always by a 'water bed' in the nature of the cerebrospinal fluid that fills the canal, there is no possibility that a mere shaking up or indirect force applied to the column, unassociated or uncomplicated with fracture or dislocation, will produce a material injury to this structure, or in any wise interfere with any of its functions. The cases that are reported as such, because symptoms referable to spinal-cord injury were complained of without any bone lesion being demonstrable by physical diagnosis, are in all probability instances of sprain of the muscles of the back, hysterical or psychic affections, in nowise comparable to a true lesion of the cord."

I trust you will pardon this long recital of definitions and descriptions. They are quoted to show the existing misunderstanding of concussion. Each author defines it differently, or at least gives a different description of the signs and symptoms which it embraces. These quotations are made with the hope that we may discover a solution of the tangle into which the term has grown. Does it not plainly teach that there is no such disorder as concussion of the spine?

The matter would be made perfectly plain to everybody if the use of the word "concussion" was confined to the method in which the injury was received, instead of trying to make it also describe the resulting condition. If one will review carefully the various authors on concussion of the spine he will find more or less complete descriptions of sprains of the spine, shock and collapse; hysteria, either acute or chronic; neurasthenia; hemorrhage into the cord or its membranes; effusion about the cord and its membranes; chronic myelitis and malingering. Where there is such a wide diversity of opinion as to the meaning of a word or the description of a disorder, supposed to be described by that word, would it not be better to abandon the use of the word altogether in that connection?

Would it not be better for surgeons to understand that the word "concussion" describes the method by which the injury was received, using other more appropriate terms to describe the resulting disorder?

William Thorburn, of Manchester, England, seems to be the only writer in the English language, as far as I am familiar with the literature, who has made a serious attempt to classify these lesions. In his classical work "A Contribution to the Surgery of the Spinal Cord" he has a chapter on "Traumatic Hysteria, Especially in Relation to Railway Accidents." He classifies the group of post traumatic functional neuroses, usually spoken of under the general term of concussion as follows: (1) "Acute effects," which he subdivides into (*a*) general nervous depression, shock or collapse; (*b*) the more localized and defined disturbance of cerebral (cortical) origin, "acute hysteria" or "hysterics." (2) The "Chronic after-effects," which he subdivides into (*a*) general nervous depression, neurasthenia; (*b*) a more localized and defined depression of cerebral (cortical) origin, chronic hysteria.

He speaks of the classification as being tentative and somewhat arbitrary, but convenient for the purpose of reference and description. It will be noticed that two of his divisions, acute and chronic hysteria, are almost entirely of cerebral origin, and have little or nothing to do with the spinal cord.

In looking over the reports of cases given in the literature, as well as recalling cases from experience, one is struck with the large number of cases which show undoubted evidence of injury to the cord, either by direct pressure or more often by hemorrhage, in which there was no evidence of injury to the spinal column. Without having made an actual estimate I should say that fully 25 per cent. of the cases at first diagnosticated "concussion," in which operative or postmortem examinations were afterward made were found to have such lesions. Moreover it is probable that the number of such cases occurring in practice is much greater than even this estimate.

A slight hemorrhage in or about the cord may easily give rise to great disturbance. There is abundance of evidence to prove that there may be extensive contusion of the cord without any external injury. The true pathology of these cases would seem to be hemorrhage of greater or lesser extent, causing direct injury to the nerve fibers and leaving a point of irritation which forms the basis for later symptoms.

In railway surgery, or under any circumstance of violent and sudden shock or jarring, we have added psychical elements, which may far outweigh the true pathology.

Following the conclusions laid down by Charcot in his classical researches we have, in a sudden and severe accident, such as railway collision, all the elements necessary for hypnotism of the patient, and the unnatural sensations in a patient subjected to such an accident easily furnish "suggestion." Thus we have, as a permanent factor in all such cases, "autosuggestion."

It is certainly the duty of the surgeon to use every possible means to eliminate these psychical elements from the case and to discover, if possible, the true extent of the pathological lesion. A given case may be entirely psychical and have no pathological lesion.

Neurasthenia is probably more closely related to the lesion of the cord than the hysterical phenomena above referred to. The use of this term should be confined to the chronic after-effects of such injuries and describe the general nervous depression supervening. By this time it may be entirely a functional matter; the original lesion of the cord having disappeared.

Believing, as we do, that minute or capillary hemorrhage is the true condition underlying these manifestations, we should seek more closely for the truth of each case, and not abandon it under the obscure and unmeaning term of concussion. Given such a case, the first manifestations will be those of shock.

In describing shock we cannot do better than accept the definition given us by Crile in the admirable work on "Surgical Shock." He says: "Immediate depression or death from injuries or operations was due to one or more of the following factors: (1) Cardiac, (2) respiratory, (3) hemorrhagic, (4) vasomotor.

The phenomena produced by the operation of these factors have so many points in common that they naturally fall into a group and would seem to be appropriately designated as collapse. Later depression or death from injuries or operations and due to a vasomotor impairment or breakdown as the essential factor may be appropriately designated shock. Surgical shock is mainly due to impairment or breakdown of the vasomotor mechanism. All the factors referred to as causing collapse may add to shock."

If the views expressed above are true, our classification of injuries produced by concussion of the spine would be as follows:

Primary effects (1) sprains; (2) contusion of the spinal cord; (3) minute hemorrhage into or around the cord.

Secondary effects or complications, (1) shock or collapse; (2) acute hysteria; (3) neurasthenia; (4) chronic hysteria.

In dealing with a given case we must distinguish if possible between a sprain, a contusion and a minute or capillary hemorrhage. Contusion of the cord, such as would be produced by a dislocation, severe twist or bend of the column immediately springing back into place, would also be accompanied by evidence of sprain. Minute hemorrhage would not necessarily have such evidences along the spinal column, but often result from a sudden shake or blow. While only one of these conditions may be present in a given case, we no doubt have many cases in which all these are present.

Our understanding of these cases will be much more rational and our treatment far more appropriate if we accept hemorrhage as the basic lesion. If we can be sure that we have had no hemorrhage or sprain or contusion then our case is purely psychical, and should be treated as such.

Every surgeon who has charge of railroad cases will remember many which have immediately recovered upon the payment of damages. If time permitted I could report at least three in my past year's experience who have promptly recovered and gone to work at manual labor within thirty days after the payment of damages claimed. In these the injury was accompanied by a small amount of real damage. The "primary effects" were slight, but the "secondary effects" were greatly exaggerated and continued long after the real injury was well. In fact, they only disappeared after an administration of the "gold cure."

I would not leave the impression that all such cases are psychical, but in many of them a pronounced psychical condition is superimposed on a very small and even transient pathological basis.

It is certainly the duty of every surgeon to protect himself, as well as any corporation he may represent, and the best interests of his patient, by distinguishing, if possible, between the purely psychical, secondarily psychical and the truly pathological condition, and our treatment should be made accordingly.

A BRIEF CONSIDERATION OF THE MECHANISM OF MENTAL STATES ENCOUNTERED IN ALCOHOLIC INSANITY, WITH ILLUSTRATIVE CASES.

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As illustrative of a class of cases which at some time during their course are brought to the notice of every practitioner of medicine I have selected from our records the following series: It is true that in their earliest stages they rarely come under observation. Their social complications, however, are commonly encountered, but they bring the subject within the cognizance of the law oftener than to the notice of the physician, so that their medical or psychiatrical aspect receives attention, if at all, too late to accomplish more than elucidation of conduct which has brought suffering, or mayhap calamity, upon one or more innocent members of society.

They occur in individuals who have been for longer or shorter periods of time habituated to the use of alcohol, and in whom the mental disorder was manifested in deeds of violence characteristically the product of the morbid mind, yet so little considered from this standpoint that one was tried, convicted of murder and sentenced to life imprisonment, and the others detained for varying periods of time in jails—none of them being sent to a hospital for the insane until time had allowed for development of the later symptoms so unmistakable that the casual observer could read them.

Their legal management and disposition would seem to justify the conclusion that we are to-day further from a true conception of their real nature than was Hippocrates who, twenty centuries ago, said that "men ought to know that from nothing else but the brain come joy, despondency and lamentation, . . . and by the same organ they become mad and delirious."[1] That criticism of the law is justified, may partly be laid at our doors. As physicians we pay greater attention to the examination and analysis of perverted bodily secretions and excretions than to a study of their influence upon the complex and delicate structure of nerve cell, frequently omitting to weigh and estimate the significance of symptoms which indicate involvement of the brain; while these are the less definitely measurable ones of disordered intellect, will, memory, emotions and instincts, they are as significant of disease as are chemical alterations in the characteristic product of glandular organs.

It is only within the past few years that indubitable evidence has been presented that the brain, as an organ, undergoes pathological changes in precisely the same manner as other organs; that these changes are, according to pathological laws, revealed in disease of these organs, and that just as definite order and sequence of symptoms is to be noted when the brain is involved as when kidney, liver and pancreas are affected by like processes. In the last named organs pathological processes may be well advanced when first made manifest by symptoms; so in the case of brain disorder there is a longer or shorter period in which the morbid can scarcely be separated from the normal—of gradual change manifest only in the most deep-going processes of the patient's nature, at first so vague and ill-defined that even he is unaware of their progressive development, but which later develop into unmistakable symptoms, such as impairment of memory, lessened self-control, disordered perceptions and emotions, ideas of suspicion and persecution, etc. From these earliest subjective symptoms, the existence of which may be known only to the patient, to the violent emotions eventuating in deeds of violence, there is such definite order of development and progression that there is only needed a knowledge of the background of inherited and environing influences out of which they take their rise to enable us to estimate with a considerable degree of precision, their significance and probable outcome—in a word, to give our prognosis as in other diseases.

Alcoholic cases are, as a rule, too complex to be grouped under any simple classification. In their different forms they present symptoms common to other forms of insanity, as well as to each other, with variations depending upon degree and duration of alcoholic poisoning and susceptibility of individual neural tissue. Differences in the effects, both of the occasional and the continuous influence of alcohol have been commonly observed. It has been said that "in every case of intoxication we must study two elements: the individual intoxicated, as to his susceptibility—and the poison ingested, as to its quantity and quality. Every man who alcoholizes himself is not an indiscriminate entity; each one carries a personal element; his individuality modifies the toxic substance quite as much as the toxic substance modifies him." (Lasegue.) The modern tendency is to attribute greater importance, as a factor in the pathogenesis of alcoholic insanity, to the special reactive qualities of the individual brain, than to either the direct toxic action of alcohol or to resulting secondary intoxications[2]; and in a certain proportion of cases this aspect assumes such prominence as to justify the opinion that the form so commonly met with, that is, systematized delusional insanity, "is never directly caused by alcohol; through its destructive influence, however, productive of degenerative changes in the mental organization, the paranoiac weakness is brought to the surface." (Dercum.[3]) Careful inquiry into family and personal history, in these cases, usually reveals evidence of psychical vulnerability. Whether ending in recovery or in chronicity, they present certain features suggestive of their toxic origin, as well as modifications in keeping with those noted in other diseases due to alcohol.

The following cases, which I report in abbreviated form, illustrate the most important clinical features belonging to this class. All had shown marked mental defects at the time the crime or deed of violence was committed, but these seem to have been unnoticed or disregarded by the courts. Because of the too frequent tendency, manifested alike by courts and physicians, to rest content with "the intoxication" as the final explanation and ultimate cause, and not merely as but one phase of the progressive mental degeneration, consideration of these few cases may not be unprofitable.

Case I.—J. B., Negro, laborer, aged twenty-eight years; a periodical drinker. Four years ago was confined for a period of eight weeks in a hospital for the insane. He was brought to Dixmont after five days' confinement in the county jail upon a charge of assault and battery while drunk. The officer who brought him said that while in jail he was sleepless, refused food, smashed cell furniture and was incessantly shouting and screaming, at first as though in extreme fear, but later he became aggressive, declaring that the world was coming to an end—that he was "the black god" who would cause its destruction. When admitted to the hospital he was noisy and incessantly active, but under eliminative treatment, hypnotics and concentrated nourishment he became quiet and apparently rational within 72 hours.

Examination at this time showed that he vaguely recalled events transpiring immediately after his incarceration in jail, but all seemed hazy and indistinct. He said that after three weeks of steady drinking he began to feel nervous and *afraid.* He could not recall details of the assault which led to his arrest, but said that while in jail he received nightly visits from spirits, who told him he was to be damned; and later, that the entire world was to be destroyed and that he was the cause of it—that he was God. While relating this the patient grew somewhat excited and his manner indicated the existence of suspicions and fears. Questioning elicited the fact that he still heard voices, though unable to distinguish what they said, and that he had heard them every night since his admission to the hospital. He, at this time, affirmed his belief in the reality of all his experiences. Two days later, however, he seemed to recognize the falsity of the sense impressions forming the basis of his delusions, which gradually faded away and, after a few weeks, disappeared entirely.

Representative of a common form of alcoholic insanity (alcoholic mania), this case presents the characteristic clinical features of suddenly developing hallucinations of sight and hearing. Under the influence of the emotion of fear, which is the outcome of the clouded condition of consciousness so invariably present in this form of insanity, assault upon an imagined enemy is made. Increasing in intensity, it is further shown by his screams and attitude of extreme terror in keeping with the accompanying ideas. The latest stage is one of grandiose ideas manifested in an assertive and aggressive manner as though demanding attention—all in keeping with the delusions which inspire them.

Incidentally, it may be noted that, while following the usual rapid course of such cases, there are here represented the different stages distinguishing the essentially chronic paranoias developed under other determining causes, viz., the early stage in which sensations (special sense impressions) are misinterpreted; next, of "delusive explanation," where sensations and images assume the forms of spirits who apprize him of his fate; and lastly, the stage of grandiose ideas corresponding to the third stage of progressive paranoia, where the conscious or unconscious reasoning is to the effect that, since he is made the recipient of such unusual revelation, he must be a personage of importance—a prophet—God.

Case II.—A. K., aged forty-four years; native of Austria; occupation decorator; has been a moderate drinker. The patient was brought to us from the Western Penitentiary where he had served two years of a life sentence for the crime of homicide. But little has been learned of his previous history from other sources than the patient, whose statement, in effect, is as follows: Sixteen years in this country, he had been regularly employed as a decorator of pottery until six weeks previous to the commission of the crime for which he received sentence. At that time, he was suspended by his foreman because he made demand, accompanied with threats, that patient's brother-in-law be reinstated in a position which he had proved incompetent to fill. Worried and anxious because of said suspension from regular work, he began to suffer vague aches and pains in eyes, head, body and limbs. He said that he would lie in bed all day and worry about his troubles. In the course of a few weeks he was allowed to resume his former duties, but continuing to feel weak and miserable, he began to drink—at first in moderation, but later he gave up work and, for a period of three weeks drank day and night. No history of this period can be obtained from others, but the statements of the patient as to succeeding events so vividly portrayed the mental state induced by long-continued intoxication, and so accurately conform to all that we know of this state, that I give them verbatim. In broken English he said: "I seem not to see just right—same as I did before; but *most of all, I be afraid.* Afraid of everything—of what I see and of what I do not see. I buy a revolver and carry it—I don't know what for, except because I be so afraid. One evening I went home; I see my own coat hanging on the door, which made me so scared it seem not to be my coat, and I shoot at it. The bullet went through the door and killed my brother-in-law, who was on the other side. I don't know what for I shoot except that I be so afraid. And he my best friend! And the people around—the fools! they let me shoot." From this the patient went on to describe systematic attempts to persecute and to poison him, which commenced soon after he was sent to the penitentiary. Next, of dreams, in which his wife appeared to him during the night to apprize him of these attempts upon his life. At first only during the night, later she appeared during the day, at least he could distinctly hear her voice. In great detail he described how, during sleep, he experienced sharp pains in various parts of his body which he interpreted as attempts to cut him up.

Since admission to Dixmont he has manifested hallucinations and delusions characteristic of paranoia and illustrative of a progressive development from the earliest misinterpreted sense impressions and the ideas to which they gave rise.

This case most vividly illustrates the predominance of the emotion of fear and the powerful influence exerted by it on the falsification of ideas. At first it is without apparent object; the patient is afraid without knowing why, and even seems, at this stage, to have appreciated the groundlessness of his fears. With the accompanying and increasing clouding of consciousness he becomes less and less able to correct by process of reasoning the faulty perception of his disordered senses —distorted by his imagination into foe or terrifying creature, and assault or attack is made in the spirit of self-defense. Under the influence of fear, the harmless object has become the nucleus for the development of terrifying hallucination, the mind adds to sensation its own images and exteriorizes them; these take the place of and perform the duty of sensation.

Throughout its later evolution this case is still characterized by fears, though they are less intense than at first as well as by other features peculiar to this form of insanity. Of particular interest is the phenomena of hypnagogic hallucinations—that is, sensations experienced during dream, or semi-waking states; these are frequently the harbingers of the more pronounced and, as in this case, the permanent alienation which follows acute alcoholic insanity, later developing into definite sounds, such as voices, words and commands, with systematized delusions elaborated from them, in keeping with the dominating emotions, and the ideas which they inspire. The continuity of the earliest manifestations of the acute attack with the pronounced and characteristic phenomena of chronic insanity is also illustrated.

Case III.—S. M. B., aged thirty-six years; occupation, farmer; a periodical drinker. Was brought direct from the county jail where he had been confined for some days. The sheriff who accompanied him stated that he had been "'crazy drunk" for seven weeks, during which period he terrorized family and neighbors by shooting from his bedroom windows; prowling around the house of a nephew armed with a shotgun; attempt to stab a brother-in-law; and finally, by threatening to kill his wife because she was unfaithful. He was mildly excited when admitted, but within twenty-four hours all excitement subsided, and he coherently explained his condition by statements which, in substance, were as follows: "I'm all right now. I guess I was off my base, but that was more because of the medicines I took than the amount of whisky I drank. Then, too, the whisky was practically poured into me by the very people who sent me here. They are conspiring to get my property, and this has been going on for five or six years." Patient described in detail a scheme of his brothers to make his creditors anxious, and have them force a sale of his property in order that they might get hold of it. He then continued: "In regard to my wife—nine or ten months ago I got the idea into my head that she wasn't true to me—I've had it all along—and then, of course, when I'd get drunk I'd think about it more than ever. I don't remember much about what happened for some days before I was brought here, except that they were worrying me back and forth; they kept following me around and talking about me in a way that made me mad, and I believe I told them that if it didn't stop I would do some damage. On the night I was at my nephew's I took my gun with me because I was afraid of skunks; I took it for company."

Though apparently composed, the patient's manner indicated suspicions. He watched every move on the part of those around him; and this suspicious attitude was the chief characteristic of his condition during the first week. Ten days after admission he accused the attendant of giving him poisoned tobacco; he refused to sleep in a certain bed because it contained carbolic acid—voices told him so. At this time he became much agitated, his manner denoting extreme fear. Two weeks after admission he explained a sleepless night by saying that it was "one of his studying nights;" following with—"say! what am I taking in that medicine they're giving me?—its such a powerful stimulant I can feel my heart jump immediately after taking it, and it makes me feel queer all over."

During the remainder of his four weeks' stay in the hospital he manifested fewer evidences of suspicion, but became more reticent. At the time of his discharge, however (through *habeas corpus* proceedings), he reiterated the statement that his commitment to Dixmont was a part of the scheme to get hold of his property; and he would not admit that he might have been mistaken in the matter of suspicions concerning his wife, adding, "but I'm willing to look at it in a different light," and gave as a reason for this concession that "fear of punishment would make a man do anything."

A year and a half has elapsed since his discharge. The sheriff, who resides in the town near him, states that the patient's visits to town are made occasions for indulgence in alcohol, and while under its influence he makes threats of what he will do to those through whom he has suffered.

This case presents, in addition to the predominating emotion of fear with clouding of consciousness (by which the symptoms of the acute attack are explained), ideas of persecution, with one of the most frequent early symptoms of alcoholic insanity, viz., gradually developed delusions of jealousy. Kraepelin says that the estrangement naturally arising between man and wife as the result of the chronic indulgence of alcohol and its necessary consequences, is the nucleus about which the delusions of jealousy form. Added to this, Krafft-Ebing lays considerable stress upon the failing sexual powers of the alcoholic[4]; and Berkley explains them by the fact that alcohol first heightens the activity of the sexual instincts, while at the same time it decreases the power of sexual satisfaction, whence arise parasthesias of the genitalia which are elaborated by the progressive mental weakness into delusions."[5]

Well illustrated also, is the abrogation of the higher reasoning or inhibitory powers, resulting in overt acts which are logically the outcome of the delusions presented. With recovery from the effects of acute alcoholic intoxication, normal controlling or inhibitory powers are apparently regained, at least to the point of suppressing, in some degree, the morbid ideas of persecution and the emotion of jealousy with its concomitant suspicions. That these are only suppressed, that is, lessened in degree of clearness by the inhibitory power of other ideas which now exert their influence, is demonstrated by the fact that they recur under the clouding of consciousness produced by subsequent intoxications, when ideas not in harmony with the existing emotions of distrust and suspicion are excluded or do not come to consciousness. Now, just in proportion to the clouding of consciousness and the predominance of the emotional element, there is tendency for these ideas to be transformed into action. With the knowledge, therefore, that the delusive ideas which characterize this case are nearly always permanent, and that alcohol acts merely by removing all inhibition, thus allowing them to come into prominence, we can confidently say that, given to periodical sprees, as he is, this patient is a constant menace to the safety of his family and others.

Case IV.—F. S., locksmith, aged forty-four years. Admitted Jan. 27, 1900. He was brought from the county jail where he had been confined for some time upon a charge preferred by his wife—of assault and battery. The sheriff who brought him said the patient told such a straight and reasonable story that, in his opinion, he was not insane. History given by the patient was as follows: A steady drinker of beer, he occasionally indulged to excess in whisky. He had been in poor health for the last five or six years, and three years ago became so weak that he gave up work and paid a visit to his relatives in Germany. No clear account was given of symptoms experienced during this time and those cited were very vague and indefinite. Patient said that he became "weak, thin, stooped and dried up." Up to this point during the examination the patient's manner was suspicious and guarded, but now, becoming excited, he talked freely, and in his broken English related his story which so typically pictures this class of cases that I give it at length. He said: "My wife never liked me—I don't know why she married me. She often did things she never told me about, and when I find them out she says it is no business of mine anyhow. Maybe this is all right—maybe not. I say nothing until one day I open a letter she gets from her mother in Germany, who writes: 'You watch him; maybe he kill you.' Now, what for she write that way? I always treat my wife good. Soon after this my wife one day say to me, 'Frank, will you paper those bedrooms for me?' I say 'sure, I will;' and she say 'then I'll buy you a keg of beer.' I thought that funny as she never before buy me beer. As I worked at papering the rooms I drank some of the beer, and two days later put in bottles what was left, drinking it during the rest of the week. Now, this is the funny part about it: Always before when I have beer the children—or maybe, my wife—they ask for some of it, but this time they stay away and not ask for it at all; but I think not much of that until I drank the last bottle when I at once get sick at my stomach. I try to throw up, but I cannot. This happened in August, 1898, but I say nothing about it all this time, though I think it very funny." Patient next gave details of wife's attempt to get rid of him by placing poison in his whisky which, after taking, was followed by the same symptoms caused by the beer. This time he accused her of the attempt, which she indignantly denied. Again, some months later (January, 1899), "she bake some bread—she put up my dinner before I go to work. She cut the loaf in half—then one-half into pieces, piling it up so (illustrates). At nine o'clock I eat two pieces—I feel all right; again at dinner and feel all right; but when, in the afternoon, I eat the last two pieces I all at once feel sick. My friend alongside of me—he ask what's the matter? I say, 'there's something in the bread.' He ask me to try some of his; I did so and it feel all right. But pretty soon *the first bread which I eat*—I had examined it and found little red spots all over it—made me so sick that I had to go home. I had pains in my arms, legs, back, and my head felt so big—in fact, I thought I was going to die; but I got home and after lying down for an hour I felt all right. Last week I say to my wife 'I not feel so well'—I buy me a quart of whisky. Where I buy it I get me also a glass of beer; it stayed down. But when I go home and drink the glass of whisky and water my wife mix for me, I right away feel sick at my stomach. I say to her, 'you poison me, so I kill you for it;' but of course I would not do so; anyhow, she had me arrested and sent to jail. I feel sure she did these things because, always after taking the things she fixed for me I get pains in my stomach and all over my body."

During his stay in the hospital he was a quiet, inoffensive patient, genial and even jovial in his manner toward other patients. as well as toward his wife and family when visited by them. When questioned about family matters, however, he became reticent. Upon two different occasions he was confined to bed with attacks of acute gastritis; following these he was most suspicious of all around him—attendants and patients alike—and for days unusually reticent. At the end of eight months he was discharged by the court which committed him.

Four months later he was returned to the hospital because his family had grown afraid of him; his suspicions had increased and manner had become more threatening. Patient stated that he had taken no alcohol since discharged from the hospital. Examination showed mental state to be the same as at the time of previous admission with delusions of suspicion unmodified. Despite repeated warnings and explanation concerning his mental condition, his wife and relatives again insisted upon removing him, and after a stay of four months, he was again discharged, this time making his home with a brother who lived many miles distant from the home of patient's wife. On Sept. 16 of this year, the patient returned to his former home and shot his wife, inflicting what was first supposed to be a mortal wound. After the shooting he gave himself up, saying he regretted the deed, and is now in jail awaiting trial.

This case furnishes an example of one of the most dangerous forms of insanity developing under the influence of alcohol. It well illustrates the origin of delusions in vague sensory disturbances which, through concentration of the attention upon them, are given an increased importance. Next there is attempt by the reason to explain such perverted sensations, and imagination unites with attention as an excitatory factor. All his own particular associations are now brought in line with the morbid idea, and in this attitude of expectant attention, the most trivial events, interpreted in the light of the prevailing emotions of distrust and suspicion, become convincing proofs that his suspicions were well-founded. With all conscious mental activity now centering about this single idea, it acquires a vividness giving it all the force of conviction and there is needed but a slight access of feeling determined by any chance circumstance and the idea is translated into action with a fatal precision.

Further cases would but multiply these essential phases of alcoholic insanity. The few I have presented will serve to indicate, in a general way, the origin and mode of development of violent actions in which they so frequently terminate and for which motive is so painstakingly sought. We must regard these acts, not only as the embodiment of the immediate content of the patient's consciousness, but more particularly as representing the final culmination of conditions and causes which have long been preparing the way. They are but visible facts, the result of an immense unconscious working, the complex and invisible causes of which must be looked for in the patient's own organism; this, often defective by heredity, is made more so by habits and mode of living productive of deteriorations earliest manifested in gradually waning control over ideas, emotions and instincts; finally developing into unmistakable disorder in the manner of functioning of the organ through which they all operate. While it may appear that external circumstances so influence and react upon the subject as to engender these latest manifestations in violent deeds, they may be regarded as merely incidental to the abnormal reaction of the defective organism which, with its misinterpreted sensations, abnormal emotions, illusions, hallucinations and, finally, delusions adequately explains all.

As clinical pictures these cases vary apparently within wide limits. There are qualitative differences depending upon variation in original constitution, as well as quantitative differences in keeping with the degree and duration of alcoholic poisoning. In mode of development, however, there are striking resemblances; and in all a definite mechanism, or order of symptoms according to and explained by familiar psychopathological laws.

"In acute alcoholic intoxication (ordinary drunkenness) the cerebral centers are influenced and become overpowered in the following order: at first the most delicate movements become unsettled, the movements of speech, which grow embarrassed, the movements of the fingers which lose their precision; later, the semi-automatic movements that constitute walking; the body reels; still later the intoxicated person is unable to keep his seat, he falls to the ground; finally follows the total loss of reflex motions, the man is 'dead' drunk; in extreme cases, loss even of respiratory movements." In the realm of consciousness there occur phenomena which go hand in hand with these of motor character; in the words of Ribot, they are but two aspects of what at bottom is really a single phenomenon. In the beginning the state of exaltation seen in some men is evidence of weakening of the power of inhibition; men abandon themselves totally to the verification of the dictum, *In vino veritas.* A condition of heightened suggestibility exists, that is, a retrenchment of the field of consciousness and there is tendency for every mental state to work out definite results of its own. It is in this state that men become the sport of impressions of the most opposite kind, often prompted with irresistible force to deeds of violence. Little by little consciousness becomes further obscured and "as a fog about a ship removes it from exact relations to surroundings, so from this standpoint, we may fancy the mind peering through a more or less misty envelope to the true adjustment of things." It is this condition which furnishes the basis for the development of phenomena so characteristic of alcoholism. The states assumed by consciousness float indistinctly about with hazy outlines; impressions received through the senses not only fail to be correctly interpreted, but generate illusions, and later hallucinations, and we have the mental state externalized as phantasmagoria of terrifying character.

In cases of gradual mental deterioration produced by alcohol, there is also definite order of involvement. Long before marked mental disorder is noted there may be manifestations of blunted moral and esthetic sensibilities and change in the normal affections and emotions. These are constantly present and are of extreme value as foreshadowing the graver manifestations of mental disease. With the progress of gradual deterioration there occur morbid ideas, suspicions, etc., in harmony with the patient's "instinctive habit of meditation." Whether these ideas have their origin in some past occurrence, or in some vague sensory disturbance (visual, auditory, sexual, respiratory, gastro-intestinal, muscular, cutaneous) attention and imagination become concentrated upon them. Misinterpreted sensations, as well as "bitter experiences nursed by brooding thought," gain increased importance and the patient who attempts to understand them, in his state of disturbed consciousness, explains all occurrences in the light of accompanying emotions, which, as in the acute cases, are nearly always in the key of fear. Since "the essence of fear is the feeling that something which we do not understand or cannot control may do us harm," the milder manifestations of this emotion, viz., distrust and suspicion, are explained in the same way as the screams of terror in the patient suffering acute alcoholic delirium, whose disordered perceptive centers and perverted imagination bring him face to face with an invisible horde of terrifying creatures. In their manifestations, however, there is this difference: In the acute cases instinctive acts of self-preservation follow the sensory stimulus which evokes the idea, with the promptness of any reflex act, and this because there is abrogation of all the higher restraining or inhibitory faculties. The cases of ordinary intoxication so commonly seen, furnish abundant illustration of prompt translation of ideas and emotions into acts, and there are all gradations from these to the cases of slower development where we see misintrepreted sensations and images elaborated into delusions, with the higher reasoning faculties becoming more and more involved until, finally they are so profoundly implicated that they are not to be reckoned with as inhibitory or restraining forces; the emotional element, now in full sway, impels to the commission of acts which are the logical outcome of the idea to which the field of consciousness is narrowed. This, briefly, is the mental mechanism, even of those cases where purpose and motive have apparently been present. While these latter are more difficult to comprehend, they differ in degree rather than in kind from those manifested in acts which are not the result of design or conviction. They all lead to acts of self-preservation and are thus seen, in their last analysis, to be instinctive.

I have referred to the barest elements in the psychological mechanism of these cases. By appreciation of the relations existing between apparently remote phenomena, we arrive at accurate knowledge of mental states, with their mutually influencing neuritic activities, and they must be correlated with the profound nutritive disturbances and the structural changes found in the cells of the cerebral cortex, which are their physical bases.

That cases so exaggerated as these I have reported are habitually left to the tender mercies of the law, must be a reproach to medical science, whose duty it should be to interpret and explain them. Despite the fact that they evolve in precicely the same manner as other diseases, with influencing factors of heredity and final determining toxic cause, their early manifestations in perversions and alterations of the characteristic products of the organ involved are not so generally understood as are symptoms indicative of change in other organs, so diagnosis often is not made until after complete development of the disorder. A method which we would hold to be inexcusable, or even culpable in our dealing with other diseases is thus often followed and accepted as a matter of course where there is question of disease in the most complex organ of man.

Without a more general knowledge of the laws which govern the mental mechanism in health and disease, early deviations in ideas, emotions and instincts (from whatever cause), must pass unheeded when appreciation of their significance would not only enable us to ameliorate the mental disorder, but in many instances to prevent it from reaching a dangerous development, or at least, to guard against termination in deeds of violence. The law (in the words of Mickle) may disregard these important earlier indications of disease, but of them clinical medicine must have a care.

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SCOPE OF THE VAGINAL SECTION.*

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THE naming of the subject for discussion does not seem appropriate to me. "The scope of vaginal operations" would, in my opinion, be better fitted. It is evident from the views expressed by some gynecologists, notably of this city, that a decided change of opinion has taken place of late years. It is probably still within the recollection of members of this section and those of the New York Obstetrical Society that the position held by me was that the vaginal route should always be that of choice, if it be possible by this route, to do the operation intended, rather than to select an abdominal incision. Some years ago the views which I held were opposed by able papers and discussions by gentlemen whose views are worthy of the highest consideration. Abdominal technic was advocated by the speakers, yet scarcely eight years have since passed and now the greatest enthusiasm in favor of the vaginal route is expressed by some of the former antagonists of this method, while my experience leads me to modify my opinion.

I am of the opinion at present that the scope for the applicability of vaginal operations is made even greater in some instances than is justifiable. It should not be doubted by any one who will reason that it would be more desirable to do an ovariotomy per vaginam than to perform this operation per abdominal section, provided it may be done with equal safety through a vaginal section. It is evident from this hypothetical example that the scope of vaginal operations must necessarily be a matter of judgment of the individual operator. It could therefore not be expected that definite rules should be presented, by which all operators should be governed.

As to my present views, compared to those previously held, I would say that, after a careful study of the subject, based upon more than five hundred vaginal sections, in the sense that this term is understood by me to be employed in this discussion, I have come to the conclusion that its application is more limited than I had at one time supposed it to be; in other words, after ripe experience, I would now give preference to an abdominal section in conditions where I would formerly have advocated an operation per vaginam.

Let us consider individual conditions. First among these I will mention suppurative salpingitis. Whenever the fallopian tubes are on the floor of the pelvis, and this is usually the case, and if the illness be acute, it is preferable to open the cul-de-sac, incise the pus tubes and drain them. This, however, requires good judgment as to the technic to be employed in individual condition. Suppose there is pyosalpinx either unilateral or bilateral, and that it is evident that the pus sacs may be readily approached per vaginam, but that the general peritoneal cavity is not walled off by pelveoperitonitic exudate. After opening the cul-de-sac of Douglas in the median line, which I prefer to do with a perforating dilator (a Palmer uterine dilator with the ends ground off to a sharp point) and then to stretch the opening with a proper dilator to such extent that the pelvic organs may be palpated; the pelvic cavity above the tubes is then walled off with sterile gauze, then the fallopian tubes are opened and after the pus has made its exit a strip of gauze is, if possible, inserted into the opening made into the tube. The vaginal opening is also packed with gauze to check the oozing from the vaginal wound and to keep the opening as large as it was when made with the dilator. In case a larger vessel should bleed, it must be sutured. The dressings are changed every day or every second day, according to the amount of secretion formed. The pus cavities are washed out with an antiseptic solution before fresh gauze is inserted. This treatment is continued as long as pus is formed, after which the openings are allowed to close. If an exudate is present which walls off the general peritoneal cavity, the gauze packing above the pus tubes is unnecessary.

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* Discussion held at the Academy of Medicine: Section on Obstetrics and Gynecology, November 25, 1902.

The question naturally presents itself as to what are the chances of a patient's recovering her health if such procedure be employed? As to the prognosis for the life of a patient, it is, so far as my knowledge goes, good. I have not lost a patient after such surgical intervention, neither am I aware of a death at the hands of any other operator; so that the important consideration is the relief of the patient of disease symptoms. My experience in the patients with pyosalpinx conservatively operated upon in the manner described is: Nine out of the 37 were symptomatically cured. Fifteen were improved to such degree according to their statements that they declined further surgical intervention. Five were not benefited at all as to their symptoms and were subjected to radical operations subsequently. Eight were lost for further observation. This is a comparatively small percentum of recoveries, and one might ask why perform such operation at all, when a more radical operation is more likely to give a perfect result, so far as the relief of symptoms is concerned, in probably three times as many patients. My answer is: It is time enough to do a more radical operation later, should a patient not get sufficient relief; and furthermore the danger of a radical operation is not increased if one endeavors to bring about relief by first doing a simple conservative vaginal operation, and finally, the direct danger from such operation is practically nil. I doubt that tubes operated upon in this manner ever regain a perfectly normal condition; they are, however, sometimes restored to a condition in which the patients are symptomatically cured of their ailment, and they may possibly become pregnant.

In instances of ovarian abscess the vaginal operation with incision and drainage is also to be recommended if the abscess can be readily reached through a vaginal section. In fact, in all instances of pelvic suppuration, if it be evident that the pus can be reached by means of a vaginal section, that method should be preferred.

So far as conservative surgery upon the uterine adnexæ is concerned, it is my opinion that, with the exception of such instances of pyosalpinx as have been previously described, better and more conservative surgery could be done, if an operation be at all indicated, by reaching the inflamed adnexæ by means of abdominal celiotomy, than could be accomplished through a wound made by vaginal section. To illustrate this: Fallopian tubes are sometimes so extensively diseased that their removal becomes necessary because of the symptoms which they cause, yet the ovaries, one or both, may be in such good condition that it is feasible to save them. By abdominal celiotomy I have sometimes been able to do this. Only a few months ago I presented two large pyosalpinx sacs at the Obstetrical Society; the ovaries in that patient being macroscopically normal, they were sewn into the cornu of the uterus from which the tube had been resected. From a recent report I learn that the patient is feeling perfectly well. Such course could not have been pursued per vaginam; nor is it likely that the feasibility of saving the ovaries could have been established by a diagnosis made by vaginal section.

The treatment which is quite generally adopted in such instances is to remove the uterus and adnexæ. Does not even one such instance prove sufficiently that vaginal celiotomy cannot replace abdominal celiotomy for conservative operative procedures on the adnexæ? I could mention a number of such operations in my practice, not to speak of the numerous similar experiences of Dr. Palmer Dudley and some other members of this Academy. This, therefore, proves that it is the exact pathological condition of a lesion and not a general lesion which should indicate a vaginal operation.

Should it be found that diseased ovaries, not the seat of large neoplasms, are causing sufficient symptoms to give an indication for operation upon them, either anterior or posterior colpoceliotomy, as the circumstances may indicate, should be the intervention of choice.

All ovarian tumors not exceeding six to eight inches in diameter and reaching to the floor of the pelvis are suitable for approach by means of vaginal celiotomy, although it may, in some instances be necessary, if the adhesions are too firm to be separated from below, to resort subsequently to an abdominal section.

While vaginal celiotomy is resorted to quite frequently for tubal pregnancy, especially in Germany, I, after having tried it seven times, have not been favorably impressed with the procedure. I would limit it to those patients who have a well-defined pelvic hematocele if an indication be at all given for surgical intervention in a particular patient, and to those in whom the diagnosis is made before rupture of the tube.

The presence of uterine myofibromata is occasionally an indication for vaginal operations. While submucous and sometimes interstitial tumors are a proper indication for resorting to this method of surgical intervention, yet if conservative surgery, namely, myomectomy is to be done, it is my experience that these neoplasms can be better treated by conservative methods if approached from above. I would limit for conservative surgery by means of vaginal operations, neoplasms which are submucous; neoplasms which are on the anterior wall of the uterus, of small size but causing irritability of the bladder;

and small subperitoneal tumors which are in the cul-de-sac. For radical operation, such tumors which do not reach beyond the true pelvis, and only then if the vagina is voluminous enough to permit of the work being done without making deep incisions for the purpose of enlarging the field of work. I have seldom seen a small subperitoneal or an interstitial neoplasm give rise to sufficient symptoms to justify any kind of surgical intervention, unless they be situated on the lower part of the anterior uterine surface.

Displacements of the uterus have frequently been an indication for colpoceliotomy, by one or another procedure. Shortening of the round ligaments may rightly be claimed as the most desirable by the advocates of vaginal operations for backward displacements. Since the time when Dr. Bode, of Dresden, did his first vaginal shortening of the round ligaments in 1895, the technic has not been materially improved upon, not even by those who did this operation at a later period. The question of importance, however, is whether vaginal celiotomy is superior to, or even as good as, abdominal celiotomy if an operation be at all indicated for the respective backward displacement. I have given up vaginal operations for backward displacements, preferring shortening of the round ligaments by other methods. My reasons for this are that I find that mobile displacements do not require opening of the peritoneal cavity at all, and patients with firmly fixed uteri can be more conservatively managed from above. If, however, a vaginal celiotomy be contemplated because of another pathological condition, as for instance a myomectomy for a small myoma, or the removal of an ovarian cyst, then, if a displacement be present, shortening of the round ligaments should be done at the same time through the vaginal incision.

The operations for ureterocystostomy per vaginam, and vaginal hysterectomy for cancer, depend as much upon individual circumstances as the operations on the uterine annexa.

I do not see an indication for a vaginal section through the cul-de-sac with subsequent drainage, in instances of septic puerperal infection unless there be an exudate in the pelvis.

THE SCOPE OF VAGINAL SECTION.

BY HIRAM N. VINEBERG, M.D.,

OF NEW YORK.

FIRST let us come to an understanding as to what is meant by the term "vaginal section." As the term is usually employed, the operation of vaginal hysterectomy is excluded, so also are the operations which are performed for the correction of a uterine displacement through the vaginal route.

Excluding these, vaginal section finds its scope in the following conditions:

1. *Pelvic Abscess.*—In cases of simple pelvic abscess, where the collection of pus has occurred in the cellular tissue of the pelvis. When the collection exists in Douglas's cul-de-sac, as is frequently the case, the section is both easy and simple. On the other hand, when the collection has taken place at either side of the uterus, in the base of the broad ligament, the vaginal incision is attended with considerable risk, notably from hemorrhage, as there is great danger of cutting the uterine or some of its branches, an accident which has occurred in the hands of the most expert operators. The guide given to avoid this accident by making the incision posterior to the center of the cervix is not always easy of execution.

When the collection is in front of the cervix the position of the bladder has to be taken into consideration. It is safer to make a transverse incision on the anterior part of the cervix as one would for a vaginal hysterectomy, and carefully push the bladder upward. If in spite of every precaution an opening is made into the bladder it will depend upon the local condition whether the opening should be sutured at once or left alone in the hope that it will heal spontaneously.

2. *Pyosalpinx and Ovarian Abscess.*—Now when a collection of pus has occurred within a tube, as in the case of pyosalpinx, or within an ovary, as in the case of an ovarian abscess, or within both, as in the case of a tubo-ovarian abscess, the question of the indications for vaginal section cannot be decided in so off-hand a manner. In my opinion vaginal section is indicated in these lesions only under certain conditions: (*a*) When the abscess sac is easily reached through a vaginal incision and can be removed entire; in other words, when it is situated in Douglas's cul-de-sac and is fairly movable. (*b*) When the sac is not large and can be removed readily through an anterior vaginal incision. I have succeeded more than once in removing a supposedly gonorrheal pyosalpinx in this way without rupturing it, and with a perfectly normal recovery of the patient. I should be loath to attempt the removal of an ovarian abscess in this manner for fear of rupturing the sac and infecting the peritoneum. (*c*) In pyosalpinx and ovarian abscess, during the acute stage, vaginal section is indicated if the collection of pus be accessible through a posterior vaginal incision, simply to tide the patient over the dangerous period. In some cases when the pus sac is unilocular and favorably situated the vaginal section may prove to be not only a palliative, but a curative measure. But in a large percentage of these cases a secondary operation will need to be performed later on. There is a class of cases of acute and subacute pyosalpinges which it is the custom at the present time to treat palliatively for weeks in the hope that in time the pus will become sterile. These cases, in my opinion, can be safely attacked through a vaginal and abdominal section combined. By pursuing such a plan the patient is saved a long emaciating illness in bed, and sometimes from an extension of the lesion through repeated attacks of inflammation during the waiting period. I will cite a case under my

care at Mt. Sinai Hospital during the past summer as illustrative of my meaning. The woman was curetted six weeks before by a physician as a cure for her sterility. This was followed by fever and pain in the right groin, and the patient had to keep to her bed. At the time of her admission to the hospital she was very feeble, anemic and emaciated, with a temperature of 103° F. and a pulse of 120.

On bimanual examination I could feel a mass the size of a closed fist pretty high up and giving a sense of fluctuation, and made the diagnosis of tubo-ovarian abscess. I placed the patient under palliative treatment in the hope that the acute symptoms would subside. But the patient's condition did not improve. On the contrary, she was growing worse. I decided therefore to make an attempt to open and drain the tubo-ovarian abscess through the vaginal route. Working very cautiously and with considerable difficulty, I succeeded in entering the abscess and evacuating about eight ounces of pus.

A few hours later the patient had to be returned to the operating room on account of hemorrhage. Thinking it came from the vaginal incision, I sutured this, and still the hemorrhage continued and seemed to come from the interior of the sac which I had packed very tightly with gauze. I hastily ligated the uterine artery on the same side, with apparently no effect upon the hemorrhage. There was nothing to be done now but to open the abdomen rapidly and enucleate and remove the tubo-ovarian sac. The hemorrhage then ceased, and the patient made a slow but satisfactory recovery. At no time subsequent to the operation was there the slightest peritoneal reaction. This plan of procedure which was forced upon me in that instance I have since adopted in similar cases with the most happy results. In that way I have curtailed the period of confinement to bed, prevented a probable extension of the inflammatory process, and saved the patient the mental worry and shock of a second operation with its attendant dangers and subsequent complications. I feel confident this method must find favor in the eyes of operators in the future. In some instances it may prove to be wiser to first open the abdomen, so as to be able to reach the pus collection from below with the greater certainty and safety, having one hand on the abdomen as a guide. By using rubber gloves in the first steps of the operation and then discarding them or replacing them with a fresh pair, the risk of contaminating the general peritoneum by the operator or his assistants can be reduced to nil.

3. *Conservative Surgery in Diseased Adnexæ.*—Vaginal section finds a suitable field in a certain class of diseased appendages admitting of conservative surgery. The cases require to be selected, but after one has gained some experience in the selection of his cases and has acquired some skill in operating through the vaginal route it is seldom that he will make a mistake in setting the indication. I would exclude all cases in which there were extensive and firm adhesions and where there were evidences of marked infiltration of the broad ligaments. In these cases better work can be done from above. I was among the first in this country and elsewhere to practise conservative surgery upon the adnexa through the vaginal route, but I recognized from the outset that the method could be used to advantage only within certain limitations. To use it indiscriminately in every case, to my mind, entails bad surgery and brings discredit upon the method. Vaginal section should not be the method of choice in the foregoing conditions when there are any evidences of involvement of the appendix. These evidences can usually be found when searched for in the previous history, in the situation of the pain and the points of tenderness on abdominal palpation. When the appendix is involved there will as a rule be decided tenderness in and about what is known as the McBurney point.

4. *Ovarian Cysts.*—One meets with a number of ovarian cysts of moderate size which can be readily removed through a vaginal incision. The removal of ovarian cysts per vaginam has been done a great number of years ago. I believe Dr. T. G. Thomas removed an ovarian cyst by this route over twenty years ago. But before deciding upon this route one should be reasonably certain that he is dealing with a simple cyst and not with an abscess of the ovary.

5. *Myomectomy.*—Small fibroid growths in the anterior wall of the body or fundus of the uterus constitute a suitable field for the vaginal route. Growths in the posterior wall, if they are situated high up, had better, in my opinion, be removed from above. When one attempts a myomectomy through the vaginal route the entire uterus should be brought into the vaginal incision so that every growth can be detected and removed.

6. *Ectopic Pregnancy.*—Vaginal section, in my opinion, is indicated in ectopic pregnancy under the following conditions: (*a*) In obscure cases to aid in forming the diagnosis. It is now over three years since I have adopted this procedure and drew attention to it in a paper read before the New York State Medical Association at its annual meeting, Oct. 15 to 18, 1900.* † In spite of the assertion of many authors that ectopic pregnancy manifests itself by certain pathogonomic signs and symptoms cases are not infrequently met with in which the diagnosis is difficult and uncertain. It is a great aid in these cases to be able to clear up the diagnosis by a simple incision into Douglas's cul-de-sac through the posterior vaginal vault. But having gained the desired knowledge by noting the presence of free blood in the peritoneal cavity it is a dangerous procedure, to my mind, to be lured to make the attempt to remove the ectopic sac through the vaginal incision. In fact, no manipulation should be practised for fear of setting up fresh hemorrhage which might prove fatal, as it has done in some reported cases, before it could be arrested through an incision of the abdominal wall. (*b*) In cases of ectopic preg-

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* Journal Medical Association, May 11, 1901.

† Dr. E. H. Grandin has also drawn attention to the value of this procedure in this class of cases.

nancy when evidently there are no further hemorrhages and when the already effused blood has formed a hematocele in Douglas's cul-de-sac or at the base of one of the broad ligaments. In many of these cases the vaginal incision and drainage prove to be curative and the patient makes a satisfactory recovery. In others, again, the affected tube is the source of future trouble, which subsides only on the removal of the tube, together with the corresponding ovary, when it is either the seat of a pathological lesion or so embedded in adhesions and exudates as to be indistinguishable and unfit for conservative procedure.

It is a good plan to pass the fingers into the cavity of the hematocele for the purposes of exploration. If a mass be found projecting from its upper wall it is usually the ectopic sac containing an organized blood clot. In such a contingency I deem it safer to open the abdomen from above and remove the mass. When this has not been done I have known serious hemorrhage to recur after the patient had been returned to bed.

HOW EASILY WE CAN BE MISTAKEN IN THE DIAGNOSIS OF CANCER OF THE STOMACH.

BY MARK I. KNAPP, M.D.,

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GIVEN the following hypothetical case: A patient possibly about middle age, not very robust, comes with the following history: Sick with dyspepsia for a long while, most likely for many years; appetite usually quite good, but, of late, comes and goes, at last leaves entirely. Is troubled with bad taste, nausea, coming up of foul-smelling gases, belching up of bad tasting, sour material; pain in the stomach, dryness in the throat, and thirst; disturbed sleep; fulness and pressure in the stomach, foul-smelling winds; a variable condition of the bowels, diarrheas preponderating; very frequent vomiting of a dark red or chocolate-colored material, while at times bright red blood is also vomited; the pain in the stomach is apt to be quite severe and there may be some emaciation noticed. The patient does not look very healthy, there is a certain doubtful hue to the color of his skin. The patient is undressed, and the fingers of the experienced physician who has finally mastered that subtle art of palpation detects a certain resistance in the supposed region of the pylorus. The more he palpates, the firmer his conviction that he has to deal with some sort of a tumor of the pylorus. A test meal is advised, but the patient at once repudiates such a barbaric, inhuman procedure. Well, "the clinical symptoms are quite convincing," meditates the consulted physician, without, however, betraying his thoughts at once. Finally, the diagnosis is asked of the physician before whom the "chocolate-colored vomit, the pain in the stomach, the tumor and the alleged slight emaciation" prominently stand in the foreground. The physician, imbued with the severity of the case, pauses ominously, then halts deliberately after each word, weighing each word significantly, and finally answers that there is positively a dangerous condition, most likely a carcinoma of the pylorus. Having come to such a conclusion he most likely urges a speedy operation, as the patient seems yet to be in a fair condition, consequently has better chances for recovery. At the same time the physician certainly does not neglect to bring before the attention of the patient and his friends the grave consequences that are likely to follow if an operation is not immediately performed. As a rule, the patient does not relish such advice, and, as is very apt to happen in nine cases out of ten, he will not at once go under the knife, but will "try a little longer." The patient, incited by the Job's news, solemnly resolves to rigorously observe common-sense laws of dietetics for a little while before submitting to the inevitable scalpel. The patient goes along for a week or so on abstemious habits, anxiously awaiting the outcome, in the meanwhile watching closely the effects of his experiments. A week passes and the patient believes he feels a little less of the misery, or, so he imagines. This inspires him with renewed hope for his possible recovery without the intervention of surgical skill. He persists in his regimen. After another week he is positive that he feels slightly better, and after a few weeks more of "strict dieting" the patient is absolutely convinced that there is nothing more the matter with him. However, to make sure he again seeks the advice of his last physician, providing he still reposes sufficient confidence in him. But possibly this visit may have a different motive; it may have a certain suggestion of the reproachful substratum of "I'll-show-you-fellows-you-don't-know-nothing-anyhow." The physician, an honest and conscientious man, sees, examines, marvels and makes the mental remark "another miracle in medicine." He is baffled by the rapid and the undeniably excellent result. The physician reflects over this case once more and the threatening undercurrent of self-reproof for not having insisted on a test meal examination is quickly brushed away by the mental question, "With such clinical symptoms as this patient had what else could it have been but cancer?" This unuttered question soothes his troubled conscience and the physician, evidently mocked, feels happier when the door finally closes behind this dubiously welcome patient.

What was the matter? In view of the fact that this hypothetical patient fully recovered, in view of the further fact that cancer is not known to be a benign affection, it must be assumed that there was an error in the diagnosis. And yet it is a fact beyond the shadow of a doubt that this hypothetical patient did have pain, did vomit chocolate-colored material and possibly also some bright red blood, and, furthermore, it is a fact that the palpator did feel a resistance, a tumor, in the region of the pylorus. How often has one met with just such a clinical history? And yet, although the cardinal clinical symptoms of cancer are here present, the patient never had even a trace of cancer.

In substantiation of this hypothetical case I will give the histories of two patients, one a case of my own, and the second, one of the reported cases of Professor Obrastzow (Ueber die Palpation des Pylorus, *Deutsche medicinische Wochenschrift,* Oct. 23, 1902).

Case I (Reported as Case IV. in my article on "Gastrosia Fungosa," *American Medicine,* Jan. 10, 1903).—Mrs. Lena S., twenty-eight years old, Russian, two children, pregnant five months. Pressure in the stomach, especially in the morning about three o'clock; pain in the stomach and palpitation, preventing sleep for some two hours; also vertigo and fainting spells. Has had epileptic fits at night quite often for the last three years. Appetite is usually good; must urinate frequently; movements of the bowels at night "catch her." During attacks of palpitation she must sit up, stem her feet against a chair, bend forward and with her hands press upon the epigastrium. Is easily excitable and has a bad and bitter taste. Drinks coffee, two or more cups about 8 A.M. For the past two or three years has been unable to eat any sweets; was treated for asthma. Both kidneys and spleen palpable.

On March 11, 1902, she came for an examination on a fasting stomach after an attack of nocturnal epilepsy, having had three fits the previous night. The fasting stomach yielded about 75 c.c. of dark-red contents which, from physical appearance, could be taken for a hemorrhage. The odor was pungent sour. The color was due to the enormous mass of mold of the dark-red variety. Under the microscope there were seen very fine beaded bacilli, greenish-yellow mold, circular purple bodies, no sarcinæ and very few isolated yeast cells. The patient was so exhausted and somnolent that she fell asleep while I was examining the aspirated contents under the microscope; she was entirely dazed. Under such conditions I did not care to give her any test breakfast. Her urine showed albumin. On March 16 examination of the stomach (the patient having fasted) showed no contents, lavage.

March 17 examination under the same conditions showed about 10 c.c. mucus; tropeolin positive.

March 18 examination after fasting found no contents; test meal aspirated half an hour after eating gave 75 c.c., mucus present, no special odor, no tropeolin reaction; acidity with dimethyl 32, general acidity 70. On March 23 she again came, complaining of having premonitory signs of the coming of epileptic fits; had had milk and roll about 10 A.M. I then (2 P.M.) aspirated but found stomach empty; admitted having had beer and grape wine the day before. On March 24 she came to report, having had a very bad night, could not sleep at all, but had no epileptic fits. Had only a cup of milk for breakfast; aspiration (2 P.M.), no contents. On April 5 reported not having had any epileptic fit for the week ending that day, although she expected it. On April 7 she felt bad and slept till 11 A.M., after which she took hot milk and water. Aspirated (2:30 P.M.) about 120 c.c. which gave free HCl 36, organic acids 28, general acidity 132. On May 2 it "caught" her very badly in the daytime, but she had no epileptic fit; this came after drinking "barshch," a sour beverage made from red beets. On July 1 the patient came to report to me that she was delivered of a healthy boy June 16, both the delivery and the boy being in undeniable evidence. She has felt very well all the time.

We see here perfect recovery, notwithstanding the very trist clinical picture of marked interference with the digestion, pain, the aspiration of a chocolate-brown material—this accompanied by pregnancy and albuminuria. I do not remember having felt anything in the pyloric region. We see that the patient's condition varied during the treatment, but this was due to the fact that she was not under my control. This densely ignorant patient, who believed her periodically returning trouble to be influenced by, if not due, to the full moon, did some experimenting on her own responsibility, but failed every time.

Case II. (This is a translation of part of the history as given by Professor Obrastzow. I give here only that part of the history which bears upon the question at issue).—Student, male, twenty-one years old, came to consult me May 30, 1901. Sick for the last three months. Began to feel nauseous at the beginning of March, knowing no cause for it. The nausea was usually preceded by unpleasant, spasm-like sensations behind the sternum along the esophagus. The nausea usually came on a fasting stomach or after severe exercise, and was often accompanied by foul-smelling eructations. These attacks of nausea lasted till April 3, after which violent pains in the abdomen after each meal and vomiting every day were added to the nausea, the vomiting bearing no strict relation to the meals or the time of the day. The vomited matter was almost always of a "chocolate color" and emitted a very pungent, raw-fish odor. Blood could not be discerned in the vomited matter. The appetite was lowered. To prevent pain the patient took liquid food, but without avail. The feces were at first hard and of a black color. Bowels moved once in two or four days. In his childhood the patient had measles and typhoid fever. In 1897 and in the beginning of 1898 the patient coughed; several times hemoptysis. No hereditary taints. Since the beginning of his sickness the patient lost 15 pounds. Syphilis and alcoholism denied. Status presens: stature and weight much below the average. Tongue dry, white covered. Posterior pharyngeal wall reddened. Heart covered by the lungs, heart-sounds pure. In the right apex diminished vesicular breathing without any râles. Examination in the horizontal position: abdomen not distended. At times a visible tumor appears below the right border of the ribs in the region of the epigastrium, which could be palpated and which gives to the palpating fingers the sensation of creaking snow. The shape of the tumor is that of a cylinder about 5 cm. in diameter running on the right side from above and outward, downward and inward. The tumor is palpable 6 cm. to the right of the median line. The tumor is moderately movable, tender on palpation.

Microscopical Examination (of test breakfast).—Few saccharomycetes, small number of short bacilli and of cocci, no thread bacilli. Odor of raw fish.

In June and July the patient practised lavage on a fasting stomach. In June was in bed for about 14 days. In July the nausea disappeared and there had been no vomiting since June till the time of this patient's visits, Sept. 25, 1901. At the beginning of August the pains disappeared, and since then the patient has felt very well. The appetite is excellent and he is no longer particular about his meals. The patient gained 19½ pounds.

In discussing this case, Professor Obrastzow points out how easily it could have been mistaken for cancer, his patient representing all the symptoms of cancer.

In both these cases we find what is alleged as being the "cardinal" symptoms of cancer. Actually, however, both are excellent examples of "gastrosia fungosa," one of the subdivisions of organacidia gastrica, described by me (*N. Y. Med. Rec.*, Sept. 6, 1902). The only drawback to a sure diagnosis of cancer is the youthful age of both patients. Nevertheless, cancer may occur in even younger individuals—rare, it is true. In my own case the nature of the chocolate-colored contents is given. It is due to the immense crop of the dark-red mold variety. Obrastzow mentions the presence of short bacilli and of cocci, but says nothing of dark-red mold (my article on organacidia gastrica and gastrosia fungosa, which I hold to be original, and which treat and demonstrate the presence of mold in the stomach and its deleterious influence on the function of the stomach, were published only very recently and could not have possibly reached Professor Obrastzow when he wrote his treatise). Both patients here reported are young, but I have seen the dark-red mold many times in quite appreciable quantity in patients of middle age as well as older. Nor is there any reason why this mold variety could not occur and grow in the stomachs of persons of any age. Case II. brought up bright red blood. This undoubtedly came from somewhere between the stomach and the oral cavity. In my original papers the vomiting of bright red blood is mentioned and explained as possibly coming from hemorrhagic erosion—ulcer—of the esophagus, a condition not rare in organacidia gastrica.

These two cases teach us not only not to be overhasty in our conclusions, teach us not only not to make a diagnosis on "what else could it be," not only teach us that a diagnosis of cancer of the stomach must never be made, unless a test meal examination is made (test breakfast), but also teach us the apparently grave clinical picture gastrosia fungosa may give. These two cases certainly do teach us that chocolate-colored vomit does not necessarily mean blood. Professor Obrastzow demonstrates that the tumor felt by him was the pylorus. In fact, many times I have felt what appeared to be a tumor but I never was sure what it was. But he likewise demonstrates that the tumor felt was nothing more than a spastically contracted pylorus. That the pylorus under such conditions—organacidia gastrica—does contract spastically I have especially dwelt on in my articles "Insufficientia pylori as a Sequela of chronic gastritis" (*Philadelphia Medical Journal,* May 24, 1902), "Organacidia gastrica" (cited above), and "Further remarks on insufficientia pylori" (*New York Medical Journal,* Oct. 4, 1902). In these articles I have fully discussed the "why" and "how" the pylorus spastically contracts. These spastic contractions of the pylorus I have termed "stenosis pylori ab irritatione," which condition stands now corroborated by Boas (Ueber Magensteifung; *Deutsche medicinische Wochenschrift,* March 6, 1902) and now by Obrastzow.

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THE OPERATIVE TREATMENT OF FRACTURE OF THE PATELLA.*

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ATTENDING SURGEON, GERMAN HOSPITAL; ATTENDING ADJUNCT-SURGEON, BROOKLYN HOSPITAL; ASSISTANT SURGEON, M. E. HOSPITAL; ETC.

To discourse exhaustively upon all the various operative procedures employed in the treatment of fracture of the patella would trespass too much upon your good nature and occupy more time than has been placed at my disposal this evening. Therefore I will limit myself to three headings: (1) the advisability of operative treatment; (2) the technic of the procedure employed by myself; and (3) a brief résumé of those cases upon whom I have operated and of whom I have been able to collect reliable data.

Advisability of Operative Treatment.—There are a certain number of cases of fracture of the patella in which operative treatment is contraindicated. These cases are to be treated by apparatus. They include those suffering from intercurrent disease of such a nature as to prohibit operative interference of any kind and who prefer to pass the remainder of their lives partially disabled rather than risk an operation the mortality of which while small is still of sufficient weight to deter the timid. Longitudinal fractures do not require operation; in comminuted fractures operation is inadvisable except in selected cases when circumsuture may be employed; neither do transverse fractures in which rupture of the capsule has not occurred require operation. This last condition is extremely rare and will be evidenced by slight separation of the fragments, the absence of tilting of the fragments, and but slight effusion into the joint. The aponeurotic structures to either side of the joint will be found intact.

In order to emphasize the importance of operative treatment we must consider the pathology of the fracture. In simple transverse fractures there are three factors which prevent accurate or bony union. First, the separation of the fragments due to the action of the quadriceps extensor and the effusion within the joint. The extent of the separation is determined by the extent of the tear in the fibrous structures overlying and bordering upon the patella. Second, the interposition of periosteum and torn capsule between the fragments. As the periosteum is torn at a lower level than the line of fracture it follows that the torn periosteum curls over the fractured surface of the upper fragment. Third, there is a tilting of one or both fragments. We have, then, three bars to accurate approximation, one of which, the interposition of torn capsule and periosteum, forms an unsurmountable obstacle to bony union. From the pathological conditions present the indications are absolute.

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Let us go further, however, and study the result of treatment by apparatus. Fibrous union must result except in those few cases in which no interposition of torn periosteum and capsule is present. It is usually a year before cases treated by apparatus can lay aside their apparatus and not infrequently it is six months after the injury before the limb can be used. Even after the lapse of a year the condition of the limb is unsatisfactory. There is always a tendency of the fibrous tissue to stretch and this causes weakness in the extension of the limb and inability to walk upstairs except one step at a time, in fact inability to walk anywhere with any degree of comfort except on level ground. Adhesions in the joint are apt to persist and cause pain and disability. The condition of such patients may be improved by a secondary suture of the patella but the final result in such secondary operations is not nearly so good as that following primary suture.

From a consideration of the final results as well as of the pathological conditions present we can arrive at no conclusion other than the advisability of operative interference.

Having arrived at this conclusion, our next object is to determine at what time such interference is best undertaken. The period which shall elapse between the receipt of the injury and the operation depends to a great extent upon the amount of coincident traumatism and synovitis. Should there be but slight injury to the surrounding structures and their vitality be comparatively unimpaired immediate operative interference may be instituted. If, however, the traumatism and synovitis be marked it is best to allow a few days to elapse in order that the tissues may be in a condition to combat more effectually the additional traumatism of an operative endeavor accompanied as this is by the probability of the entrance into the wound of a certain number of bacteria. This period varies from five to fourteen days.

This period, which may be termed the period of initial treatment, has for its object the rendering impossible of further separation of the fragments by spasmodic contractions of the quadriceps, the controlling of the effusion with the same object in view, the promotion of the rapid absorption of inflammatory products and the preparation of the skin for operation. These various objects are obtained by elevation, fixation, compression, evaporating lotions and the ice-bag. The leg, knee and thigh are shaved and cleansed. The limb is placed upon a Volkmann splint, to which the foot and leg first is bandaged and then the thigh. The bandage securing the thigh should be broad and should exert sufficient pressure to control the spasmodic contractions of the quadriceps extensor. The effusion into the joint is controlled by a pressure bandage frequently readjusted. This is supplemented by an evaporating lotion of alcohol and water and by the ice-bag. If there is severe pain local applications of lead and opium wash may be employed or Majendie's solution administered hypodermatically. Any attempt at first to approximate the fragments will meet with failure on account of the presence of the effusion. The dressings should be so arranged as to allow of daily inspection of the knee without disturbing the relation of the parts. As soon as the effusion and the inflammatory reaction is seen to be subsiding the case is prepared for operation.

In cases in which the distention of the joint is extreme or in which there does not appear to be any attempt on the part of nature to cause an absorption of the fluid, the joint may be aspirated. It is impossible to withdraw all of the fluid as the needle becomes readily blocked with blod clot. The removal of even a small portion will, by lessening the tension, promote the absorption of the remainder. The blood clots lie for the most part at the back of the joint and beneath the lateral aponeurotic attachments. In order to avoid them and withdraw as much of the fluid as possible it is advisable to enter the joint at the inner and lower border of the patella with the needle directed upward and backward, its point finally lying in the joint just behind what would normally be the center of the patella. The technic of aspiration must be carried out with the same rigid attention to asepsis as is employed in exploratory and remedial puncture elsewhere.

Technic of the Operation.—The most rigorous asepsis is insisted upon. I make it a rule that no hand, however well disinfected, shall touch the wound, nor any part of an instrument coming in contact with the wound. Except through the air, the skin of the patient, and the suture material there is no medium by which infection can enter the wound. To guard against carrying infection from the skin, two knives are used, one for the skin and the other for the deeper dissection. Two sets of retractors are used: one for the skin the other sharp-hooked, to steady the fragments. Stick-sponges are used so that there is no need for the sponges to come in contact with the hands. For the skin incision I employ either Hahn's, Mackenzie's, or, more recently, an incision suggested by Dr. George R. Fowler. This incision is smaller than either of the others, yet it can be retracted sufficiently to allow direct inspection of the joint cavity and gives sufficient room for the application of the sutures. The incision is three to four inches in length, full curved to conform to the normal border of the patella, and placed to the inner side of that bone. This incision is made with the first knife, the edge of the flap is picked up with anatomical forceps and the flap reflected with the second knife so as to expose the torn capsule and the upper and lower fragments. The raw surface of the flap is covered with a gauze hand sponge. The flap is retracted to allow of a full view of the parts. The fringe of torn periosteum and capsule is picked up with anatomical forceps at one extremity of the rent and with a knife is shaved away from the fractured surface of the upper fragment. The fractured surface of the lower fragment is cleared and both surfaces freshened with a sharp curette. All blood clots and torn ends of tissues are removed with anatomical forceps. To irrigate the joint or to remove the clot with stick sponges only inflicts needless traumatism on the synovial lining and predisposes to adhesions. The upper fragment is held fixed by sharp retractors in the hands of an assistant and is pierced by the drill to either side of the median line. The drill enters the anterior surface of the bone one-half inch from the fractured surface and emerges on the fractured surface one-eight of an inch from its posterior edge, thus insuring accurate approximation. Four holes are drilled, two in each fragment. Each time before withdrawing the drill each end of a strand of silkworm gut is passed through an opening in the end of the drill. This forms a carrier which facilitates the passage of the bone sutures. Medium-sized chromicized kangaroo tendon is used. The drill is withdrawn and disengaged leaving the tendon in place. Care is taken that the drill holes in the lower fragment correspond exactly to those in the upper fragment. Two other tendon sutures are introduced one to either side of the patella close to the bone. The fragments are now steadied and held in apposition with hooked retractors and the sutures tied, the lateral sutures first, then the bone sutures. As a further precaution the rent in the capsule is closed by a continuous suture of fine kangaroo tendon. A subcuticular suture of silk closes the skin wound. A light dressing is applied and the limb secured to a Volkmann splint.

The after treatment and final results are briefly described in the following cases:

Case I.—F. B., aged thirty-nine years, male; occupation, driver. Injury received July 25, 1898. Result of muscular action. The fracture was simple, transverse, with 1½-inch separation. There was immediate disability. Synovitis and ecchymosis were not marked. The parts were supported by a compress and bandage and two days later operation was performed. Ether anesthesia lasting 33 minutes during which time eight ounces of ether were used. Hahn's incision. The capsule was found completely ruptured. There was but a small amount of blood and synovia in the joint, few clots. There was no tilting of the fragments. The line of fracture was in the middle transverse line, with the torn capsule overlapping the fractured surfaces. The usual toilet of the joint was done and the fractured surfaces held in apposition with a circumsuture of kangaroo tendon supplemented by a suture of the capsule with the same material. The skin was closed with a silk subcuticular suture. Plain gauze dressing; Volkmann splint. On the tenth day all dressings were removed, the subcuticular suture removed, and a supporting bandage applied. Massage and passive movements were instituted. On the fourteenth day the patient was out of bed and began active movements of the knee. On the eighteenth day he walked unaided. The functional result was perfect at the end of the third week.

Case II.—W. S., aged thirty-three years, male; 3½ years before present injury fractured right patella by muscular action. Treated in St. Vincent's Hospital. Strapping and plaster of Paris. Eight months later refractured patella and was operated upon at Bellevue. Bad functional result from adhesions. On Dec. 19, sustained a third fracture by muscular action. Simple transverse fracture with one-half inch separation of the fragments. Synovitis and ecchymosis, slight disability. Treated by preliminary compression bandage and Volkmann splint. Operation 15 days after receipt of injury. Hahn's incision. Fragments found widely separated. Capsule completely ruptured. Fracture in lower transverse line with torn capsule interposed. The usual toilet of the joint was performed, torn capsule trimmed and dense fibrous tissue from edges of fracture cut away. Two broken sutures of silver wire from the previous operation were removed. Holes drilled in fragments and approximation secured by heavy sutures of chromic gut. Incision in tendon of quadriceps to relieve tension. Capsule sutured with chromic gut. Subcuticular for skin incision, plain gauze dressing, fenestrated plaster cast. Subcuticular removed on the tenth day. Cast kept on for 60 days; discharged the seventy-third day after the operation with some, though not solid, union and with slight lateral mobility of patella.

Case III.—P. H., aged sixty years, male; occupation, roofer. Jan. 1, 1900, right patella was fractured by falling on a flat surface. The fracture was simple transverse, with 2½ inches separation. Ecchymosis and synovitis were not marked. There was immediate disability. Initial treatment consisted in the application of a Volkmann splint, strapping the joint and the use of an ice-bag. Operation eight days after receipt of injury. Ether anesthesia, 16 ounces being used, and taking 50 minutes. Hahn's incision. There was complete rupture of the capsule, with slight amount of synovial fluid and blood clots. The fracture was in the middle transverse line with the upper fragment tilted forward, its fractured surface being covered with the torn capsule. The usual toilet of the joint. A kangaroo mattrass suture of the quadriceps and ligamentum patellæ was applied in front of the patella. This served to overcome the tilting and gave perfect apposition of the fragments. This was supplemented by a suture of the capsule with formic catgut. The skin was sutured with a subcuticular of formic catgut. There was a slight rise of temperature on the fifth day. Inspection of the wound failed to reveal any infection. During the third week a light cast was applied with a fenestrum over the patella and the patient allowed to walk aided by a chair and a stick. Lateral massage of the patella was done daily. During the fourth week the cast was removed and active movements begun. On the thirtieth day the patient began light work. He never used crutches. Four months after the operation the functional result was perfect. There remained no evidence of fracture. Examination two years after the operation reveals a heretofore unnoticed increase in the size of the right leg. The patient informs me that this has always been so and is the result of the position which he assumes in following his occupation as roofer.

Case IV.—A. W., aged thirty-eight years, male; occupation, steamfitter. Coincident disease, articular rheumatism, chronic alcoholism. Left patella was fractured Feb. 9, 1901, by a fall on a flat surface. Simple, transverse fracture with 1½-inch separation. Ecchymosis and synovitis not marked. Immediate disability. Initial treatment, ice-bag, compression bandage, and Volkmann splint. Operation, ten days after receipt of injury. Anesthesia, chloroform one ounce, ether eighteen ounces. Duration of anesthetic fifty minutes. Hahn's incision. Complete rupture of capsule, small amount of blood clot and synovial fluid; no tilting. Fracture in middle transverse line with torn capsule interposed. Usual toilet of joint. Interrupted suture of kangaroo tendon for capsule. Linen thread subcuticular suture. Volkmann splint. Subcuticular and all dressing removed and massage and passive movements begun on the tenth day. Active movements on the fourteenth day. Patient walked unaided on the sixteenth day. Two weeks later functional result was practically perfect.

Case V.—J. H., aged thirty-seven years, male; occupation, fireman. Patient very stout and pronouncedly alcoholic. Right patella fractured Sept. 10, 1901, by blow from nozzle of hose. Simple transverse fracture with 2½ inches separation. Immediate disability. Marked ecchymosis and synovitis. Initial treatment ice-bag, bandage, Volkmann splint. Operation, fourteen days following injury. Anesthesia, chloroform one ounce, ether 20 ounces, morphine sulphate one-quarter grain. Duration of anesthetic one hour and eighteen minutes. Mackenzie's incision. Complete rupture of capsule, much synovia and blood clot, and both fragments tilted forward. Fracture in middle transverse line with torn capsule interposed. Usual joint toilet. Fragments drilled and two sutures of kangaroo tendon introduced. Capsule sutured with kangaroo tendon. There was considerable difficulty in maintaining the fragment in apposition. Silk subcuticular for skin. On account of the alcoholic history, a plaster cast was applied. This was removed on the sixteenth day and the subcuticular suture removed. Passive movements were then begun but did not meet with much success. On the twentieth day the patient was compelled to get out of bed but refused to indulge in active movements except to a very slight extent. Patient persistently refused to move the joint with the result that at the end of three months there was but slight motion. This has since improved greatly.

Case VI.—G. F., aged fifty-eight years, male; occupation, collector. Right patella fractured nine years ago. Sustained present injury Nov. 4, 1901. Fracture of left patella. Result of muscular action. Simple transverse with 2½-inch separation. There was immediate disability. Slight synovitis and ecchymosis. The leg was treated by an ice-bag to knee and rest in bed for twelve days. Internal curved incision. There was complete rupture of the capsule, a small amount of blood clot and synovia in the joint. Both fragments tilted forward. The fracture was in the middle transverse line, the upper fragment slightly larger. The edges of torn capsule were interposed between the fragments. The usual toilet of the joint was performed and the edges of torn capsule trimmed away. The fragments were approximated by through-and-through suture of the capsule with kangaroo tendon. The skin was closed with a subcuticular. A plain gauze dressing applied. Bony union was secured and the case was discharged on the sixty-third day, with almost normal movement.

Case VII.—K. M., aged forty-two years, seamstress. Injury received Nov. 16, 1901. Result of a fall upon a flat surface. Fracture of right patella. Simple transverse with two inches of separation. There was immediate disability. Synovitis and ecchymosis were slight. The parts were supported by a Volkmann splint, with compression bandage and ice-bag for ten days when operation was performed. Curved internal incision. Rupture of capsule complete. A considerable amount of blood clot and synovia was found in the joint. There was tilting of the fragments. The fracture was in the middle transverse line the size of the fragments being equal. The torn capsule was interposed between the fragments. The capsule was sutured with through-and-through suture of kangaroo tendon. Skin sutured with silk subcuticular. A plain gauze dressing was applied and the limb was placed in a plaster cast. The first dressing was done on the fourteenth day. The cast was kept on until the third week when a lighter one fenestrated was applied and the patient allowed to get out of bed. This cast was removed on the twenty-eighth day and active movement begun. Patient allowed to walk with crutches. On the fortieth day the patient walked unaided. Bony union was obtained. The patient resumed her occupation on the fortieth day and a perfect functional result was obtained the ninety-sixth day.

Case VIII.—J. S. B., aged thirty-five years, male; stableman. Injury received Dec. 7, 1901. Fell against a curbstone. Fracture of left patella. Simple transverse with an inch of separation. Synovitis and ecchymosis were marked. Disability was immediate. The limb was put in a compression bandage and placed upon a Volkmann splint with an ice-bag applied to the joint. On the tenth day operation was performed. Curved internal incision. The joint was found full of synovia and blood clot and there was complete rupture of the capsule. Both fragments were tilted forward. The fracture was in the middle transverse line and torn capsule was interposed between the fragments. The capsule edges were trimmed, the usual toilet of the joint performed and the capsule sutured with interrupted kangaroo tendon. A plain gauze dressing and a plaster cast were applied. The first dressing was done on the twenty-first day when the cast was removed and active movements allowed. Patient walked unaided on the twenty-fourth day. Crutches were not used. Moderate lymphedema necessitated the application of a supporting bandage. The result was good bony union. The patient was allowed to resume his occupation on the forty-fifth day and a good functional result was obtained by the fiftieth. Slight lymphedema persisted.

Case IX.—B. M., male; general helper. Injury sustained Feb. 11, 1902. Direct violence; falling against a curbstone. Simple transverse fracture with two-inch separation of the fragments. Synovitis and ecchymosis were marked and disability was immediate. The leg was placed in a Volkmann splint with a compression bandage and ice-bag for 14 days when operation was performed. Curved internal incision. Complete rupture of the capsule. The blood clot and synovia were removed from the joint cavity and the torn edges of capsule interposed between fragments trimmed away. The fracture was in the lower transverse line and the upper fragment was twice the size of the lower. The prepatellar bursa was involved. The edges of the torn capsule were united by interrupted sutures of kangaroo tendon and a silk subcuticular used to close the wound. A plain gauze dressing was applied and the limb placed upon a Volkmann splint. The dressings were removed on the twentieth day. Bony union. Functional result perfect at the end of the sixth week.

SOME PHYSIOLOGICAL OBSERVATIONS ON A CRUSTACEAN HEART.

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(Concluded from Page 550.)

V.

Various and numerous mortal mutilations and divisions of *Daphnia* with a sharp and delicate scalpel were made to determine, if possible, the relations of the heart to the remainder of the organism, and especially the degree of the heart's independence and autonomy. These painless operations were performed sometimes by aid of a triple hand-lens and sometimes with the naked eye, the large number of experiments being trusted to bring about, in part, by chance, as it were, that which, because of the extreme smallness of the animal, was often impossible deliberately. When the section had been made the compound microscope helped to determine exactly the location of the incision and, as near as might be, its effects, especially on the heart. Yet even with a body rarely over a millimeter long it is not difficult to make, even with the naked eye, many desired sections. The shell of this animal is soft enough to allow of clean cutting in any place or direction if the blade be keen, and serves, moreover, to keep entire the parts produced. All these mutilations and divisions, it will be readily seen, involve at least three pathological conditions, each of which may have strong influence, conceivably, on the heart, namely, shock, the severing of nerves, and the cessation of the circulation. The first, we have already given evidence to believe, would tend to inhibit the heart, while the last, by depriving the organ of the normal stream of its nutriment and of most of the resistance against which it normally works, would tend still further to derange its action late or soon. So small is *Daphnia* that to discriminate these modifying conditions of any experiment is impracticable, for any sectioning or other form of mutilation other than mere puncture stops the circulation by opening its conduits, while the nerves that any particular section may disturb it is, in our present knowledge of Cladoceran neurology, quite impossible to say. The results derived from these particular experiments are therefore gross effects, yet quite adequate for the intended purpose.

The result of the removal with the knife of enough of the head so that all of the central nervous system anterior to the esophagus was removed, in one experiment was to slow the heart for three or four minutes about 40 per cent., after which period very nearly the normal pulse-rate was resumed. Such a section stopped all blood circulation proper, although the blood was to be seen (by means of its large corpuscles) passing gently, in and out of the heart in a random sort of way. In another experiment in which the head was severed about the same showing in the pulse-rate resulted, but the latter did not get back to normal, and in five minutes the heart stopped for good, within the time limits of the test at least, although the respiratory feet began active movements as the heart's ceased. In all the mutilations of this sort the heart changed in shape somewhat, in its systolic or contracted shape especially, the viscus being obviously always in some degree of collapse, the heart becoming flatter in its systole, due possibly to a tetanic shortening of its separate muscular segments.

Transverse, that is dorsoventral division of the body into three parts, an anterior, middle and posterior part, naturally caused a more serious effect on the heart's action. (1) In one case, *e.g.*, in which the anterior portion included the brain and the posterior about one-quarter of the body, the heart beat weakly and fast about two minutes and stopped. (2) When the animal was divided once, and that just anterior to the heart, the latter was not beating two minutes after. (3) A similar section left the heart beating weakly and fast for a minute, but this soon gradually ceased. (4) In another case where the body was divided into three portions almost equal in length the heart stopped at once, resumed its movements in the shape of a slight rolling three minutes later, began to beat coordinately five minutes later at a rate of 140, became slower very shortly, and in two minutes more had stopped permanently. (5) Removal of abdomen by a section one-quarter the body length from the caudal end stopped heart permanently without more ado. (6) Division of the animal transversely in the middle line, so that heart was in the anterior half, caused immediate stopping of the heart, but fibrillary movements began in two minutes, precensors of a more or less normal beat.

Many experiments were made to determine the consequences arising in the heart from a mere opening of the blood channels, thus causing the pressure to markedly fall and in nearly every case entirely suspending the circulation so far as the corpuscles floating in it could determine. Its effects one learns from these sample experiments. (1) Section of the blood sinus dorsal to the brood sac caused the heart to work more slowly and with marked spasmodic or jerky movements. (2) An incision into the circulation in the extreme caudal end of shell proper had no marked visible effect on the heart save to reduce somewhat its average size as it beat. (3) Section oblique and deep just posterior to the heart caused a slowing of the latter and made it smaller in systole. (4) A deep incision into the dorsal and posterior part of the animal lessened markedly both the force and the rate of the heart; the incision was then closed up, apparently so as to be quite obliterated, and the heart at once beat much more rapidly. (5) An incision into the circulation was made, causing the heart to stop at once; in a few seconds it started up jerkily, soon regained its normal rate, which lasted for nearly two minutes, then stopped for two minutes, after which, suddenly, with three slow beats, each quicker than the preceding, it began beating rapidly, somewhat spasmodically, but progressively less so; no circulation was visible at any time. (6) The "abdomen" was cut open rather deeply at the place where the posterior ganglion seems to be in the bend of the gut. The heart stopped, but began in three minutes the marked, wave-like movements, which in another minute changed to a somewhat irregular beat—with the viscus in two parts functionally, the dividing line being at the lateral opening, and the posterior or auricular part being rounded and saccular, while the anterior part was much more flat.

These simple enough experiments suggest to some extent, at least, the dependence of the *Daphnian* heart on the nutritive materials of its blood, for serious derangements immediately follow the cessation of the circulation, thus reducing the supply of nutrient normally supplied, both to the outside and to the inside of the viscus. But the removal of the nourishing plasma from the heart's protoplasm was never in these experiments approximately complete, the strength of the stream, merely, was stopped, as the stasis of the corpuscles proved. Plasma, doubtless, still bathed the heart outside and regurgitated in and out through the cardiac openings. These tests show, notwithstanding, that the rhythmical automaticity of this heart depends upon its immediate food supply, the organ becoming slow and irregular in its movements and stopping, probably, when the nutriment of the immediately surrounding plasma is consumed. Experiment 4 of the last series above is especially conclusive on this point, for it practically demonstrates that the irregularity and slowness following incision merely into the circulation are dependent on the consequent lessening or stopping of the blood stream, either mechanically or anabolically or both, the incision made into the blood sinuses in that experiment having been completely closed again after its effects had been observed, with the result that normal heart action was immediately resumed. The same result has been demonstrated by Porter on the mammalian heart under much more artificial conditions, but this confirmation comes from a heart far removed in its simplicity even from the heart of the frog so responsive to Ringer's solution. From the circulatory improvement following the infusion of salines in surgery it cannot be doubted that hydraulic principles have some share in the explanation of the facts.

VI.

The reactions of the heart of *Daphnia* to galvanic and to induced electricity suggest one or two interesting things, but leave these things unexplained. The apparatus employed in this series of experiments, as in the others, was appropriately simple, the animals being too small to allow of the application of special instruments, which possibly might explain results in more definite terms. The apparatus consisted of dry cells, the ordinary laboratory students' inductorium, Pohl commutator, simple key, and part of the time the Morse key, seconds circuit-breaker, and kymograph already described as used in the exact study of the pulse-rate. The electrodes of this electrical circuit were adjusted to the microscope stage so that they included the drop of water on the slide which contained the animal. No attempt was made to stimulate the animal directly, that is, without the intervention of water, since to remove it would be to put the animal into an unwarrantably abnormal condition. Moreover, the structure of the animal, so largely saline fluids, makes it probable that its body is at least a moderately good electrolyte. To various specimens, then, lying in a flat drop of water under the objective, various currents of electricity were successively applied. We record a few typical experiments:

(1) A constant galvanic current of a strength of about three volts caused no obvious effect on the heart within the limits of the experiment, nor did any weaker strength. Nothing different from normal was to be seen in the heart, either at make or at break. That the pulse-rate was not changed was proven by making on the kymograph-drum a series of records of the heart rhythm by the indirect method already described; each record was ten seconds long and at intervals of one minute from each other, the whole lasting fifteen minutes, during which time three volts passed continually through the animal. No change whatever in the pulse-rate was discoverable on measuring with the compasses and averaging these fifteen records. The direction of the current through the body likewise showed no difference. (This current at make, and especially at break, caused spasmodic contractions of the feet and a disturbance of the normal oscillation of the eye.) (2) The only obvious effect on the heart of a current of a tension of 4.3 volts was sometimes to stop it momentarily on the make. Continued, this current gradually deranged the normality of action of the heart and caused it to undergo a small degree of the collapse characteristic of the viscus under excessive stimulation of any sort. Aside from this effect even this considerable degree of electricity caused no change in pulse-rate or other function. It caused, however, violent spasms of the antennæ, in addition to the effects of a weaker current. (3) In another individual this strength of 4.3 volts stopped the heart and held it in diastole as long (within limits) as the current passed. When the head was toward cathode, *i.e.*, when the electricity passed perhaps from "auricle" to "ventricle," the effect seemed to be more marked than when it was in the contrary direction. On breaking the circuit after a sustained diastole the heart beat exaggeratedly several times, as if in compensation. (4) This same current running in either direction through the body caused the heart to dilate actively and to stop nine seconds, then allowing it to go at a normal rate but with a diastole greater than normal spatially. When this current was broken the pulse-rate became somewhat slower than during the passage of the current. After this varied stimulation, lasting a few minutes, the heart stopped again; an antero-posterior descending current of the same strength then produced a distinct dilatation of the ventricular end of the heart, while an ascending direction was followed by an active dilatation of the whole heart, otherwise still. (5) A current of 7.8 volts intensity caused the heart to stop in extreme diastole for about a second, it then beating on in a much exaggerated way, both systole and diastole being increased, but more slowly than normally. When the current was broken the viscus stopped short in moderate systole, and had the appearance of a degree of protoplasmic collapse, even from one shock. (6) In another specimen, making of this same strong current caused a momentary dilatation, followed by action normal save that it was slow. When the circuit was broken signs of collapse of heart were prominent, but not more so than in the other protoplasmic mechanisms of the body. This strength of current, especially at break and make is rapidly destructive of the life of this animal, and that beyond repair.

In these experiments with relatively high tension galvanism the absence of effects on the hearts of embryos, usually conspicuous within the maternal brood-sacs was very marked. Even 7.8 volts had no visible effect on these embryo hearts until after several minutes of their stimulation. It seemed that the pulse-rate of the embryo hearts sometimes was increased and not decreased, as in the adult heart. Regularly in these experiments the hearts of the embryos continued to beat long after the parent organ was practically, if not literally, dead. One is tempted almost to suggest an explanation of this phenomenon as the absence of nerves from the embryo heart, which, in the adult, collect the destructive electric waves and conduct them harmfully to the heart; in the embryo perhaps there is nothing but itself, composed of muscle cells, to be deranged, and that less readily than a neural mechanism would be.

The one conspicuous fact then in relation to the effects of galvanism on *Daphnia's* heart is that the latter is exceedingly resistant. To currents which may be termed weak or moderate for a small animal, the heart shows no reaction whatever within the period of truly physiological influence. To currents somewhat stronger there is a momentary halt in diastole, and often signs of an active diastole or at least of an active dilatation. The compensatory extreme action after a pause artificially produced by a galvanism of sufficient strength is oftentimes conspicuous. With still stronger currents the actual protoplasm of the body is deranged, and in this the heart naturally has a part; the break is a more powerful disorganizer than is the make of the current. Thus we see that while a strong current may destroy the functional character of the heart as a coordinated complex contracting organ, working rhythmically, it may not be capable of altering this automatic working save in this indirect and pathological way.

Induction currents act on the heart, as always, much more strongly than does galvanism. Using a primary current of one volt strength, the induced current from the common small students' inductorium has no apparent effect on this heart until the secondary coil is within 2 cm. of the place of maximum strength. No change in the rate, as shown on the kymograph drum, is to be made out. None of the dilating effects which the constant current produces are to be seen; nothing of the compensatory overactivity, nor does the induced electricity seem even to stimulate to normal activity the heart stopped by any agency. The experiments with the alternating induction-currents gave results, negative or positive, so uniform that the citation of sample cases is in this case needless: namely, below a fairly constant strength no result, above that point that collapse with the pseudo-fibrillary wave-like movements we have noted so frequently. Maximal alternating shocks promptly kill the heart and the other organs of the animal, the cardiac collapse reaching in this case a degree which reminds the observer of the effects which complete mechanical crushing would produce. With lesser degrees of the current, sometimes the brain seemed to be disorganized first, in which case the heart may slow somewhat and later recover its normality as in other cases of cerebrally originated inhibition.

Single make and break shocks of induced electricity have an effect less than the automatically made and broken currents in proportion to their relative infrequency. Thus single maximal make shocks caused tetanus of the ocular muscles, but usually no obvious effects on the heart. Single break shocks act more powerfully, oftentimes instantly stopping the heart for a few seconds, after which the normal rate was resumed. Weaker single shocks showed proportionately less effect.

The direction of the induction current seemed to make no difference. Embryonic hearts in the brood sac are affected much more easily by induced than by direct electricity, but yet are more resistant than is the adult heart.

In general, then, induction currents may be said not to influence *Daphnia's* heart appreciably unless they be of destructive intensity and frequency.

VII.

Diluted beef serum was added in many cases to the animals when their hearts had stopped from one or another of the causes already described. The results of this procedure were not in any case surprising in any respect. Recoveries and instances of increased normality of function occurred often enough to warrant the assertion that even beef serum, different as it probably is from the blood plasma of *Daphnia,* has a distinctly beneficial, that is, anabolic effect on the animal's heart. The recoveries in some cases took place more promptly than they would have done without the nutritive and perhaps stimulating solution; in other cases it cannot be doubted that the lives of the animals were in many cases restored ,which without it would have been lost. The effect was never immediate, for a few minutes seemed to be required to allow of the absorption of the serum into the circulation from the surrounding water.

Sometimes there was excellent evidence that the cells or segments of the heart were acted on individually by the salts of the serum, for there was caused in some cases a contraction of the separate cells when the coordination which alone could make of their individual contraction a heart-beat was entirely lacking. The influence in quickly restoring a normal pulse-rate was particularly striking, for whenever the heart started up through the action of the serum added, the rate became either very soon or, more often, at once practically normal. Sometimes the heart was so collapsed, as for example, by the alternating induction-current, that it could never beat to its full capacity probably, yet the restorative influence of the serum would cause the setting up of the normal rate of movements in the shapeless mass of cardiac muscle cells lying on the floor or ventral side of the cardiac sinus. On the normally active heart no accelerating effect could be observed from this agent, but on the disabled organ the serum had an undoubtedly vitalizing influence.

VIII.

The observations which were made regarding the effects of certain typical drugs on the heart of *Daphnia* were carried on distinctly not as a study of the drugs' respective actions, but in search of knowledge regarding the heart under various stimuli, as in the experiments reported in previous sections. It appeared, however, in these tests, quite inadequate as pharmacological experiments, that such simple and transparent animals as is *Daphnia* might be used with very great advantage probably in studies of the various drugs in so far as one seeks their effects on protoplasm; one sees all the organs at once and all appreciable effects produced could be accurately gauged and recorded. One would learn in many cases relatively little or even possibly nothing from such possible researches as to the action of any drug on a mammal, and that chiefly because in *Daphnia* the nerves are unknown and probably relatively few in number and simple in their connections, thus making the probable main effect of any drug to take place directly on the heart; in the mammal, on the other hand, the influence of most drugs affect the heart largely through the nervous system. Still, as has been said, organisms like *Daphnia* seem an excellent place to study the effects of many drugs on protoplasm by direct application.

In these experiments the drugs were used strong so that their stimulating results, whatever their nature, might be the more emphatically discovered; were one studying the drugs and not as here, the heart, their strength would have been at least in part very much lessened, for only so could their ultimate nature have been determined.

Alcohol.—(1) One per cent. ethyl alcohol makes the animal jump around, but seems not to affect appreciably the heart within the time limit of the experiment. (2) In case of a small individual, a 2-per-cent. solution of alcohol seemed to have at first an accelerating influence on the heart, which disappeared in about four minutes, and was followed by violent convulsions of the whole body; 4-per-cent. alcohol added then in place of the weaker solution caused in one minute the beginnings of a cardiac paralysis; five minutes later the organ was still save for the possible flapping of the valves; five minutes later there began slight clonic spasms or tremblings of the body generally which seemed to start up (?) slow, weak and slight pulsations of the heart. Distilled water was now poured over the specimen and within half a minute the normal pulse-rate had gradually returned. (3) In another individual, 4-per-cent. alcohol caused quickly a slowing of the heart almost to stasis, it then becoming irregular in its beat, with a sort of rhythm in which it missed one beat out of four or five. (4) Four-per-cent. alcohol seemed not to affect this specimen as soon as some, but in five minutes the heart stopped more suddenly than usual; in two seconds it started up again, and in three or four minutes it had become regular and·abnormal only because a little slower than usual. (5) A solution of alcohol of about 5-per-cent. strength caused heart to slow up and stop within five seconds from time of its application, the stasis being in diastole. Stronger alcohol causes quick death of whole body by withdrawal of water from the protoplasm.

Nicotine.—A 2-per-cent. aqueous solution of nicotine caused immediately clonic spasm of the skeletal muscles, especially rapid in the embryos, but no great effect on the heart. After eight minutes the pulse-rate was about 168; after twelve minutes the rate was 120 and both systole and the diastole obviously weak; at the fourteenth minute the heart stopped in moderate diastole, its rhythm having been so irregular recently as scarcely to be imitated with the recording key. Water was then added without reviving the heart; 10-per-cent. alcohol caused heart to start, and in fifteen minutes it was beating about a hundred times a minute.

Chloral Hydrate.—(1) A 1-per-cent. aqueous solution of chloral hydrate in the course of ten minutes had slowed the heart a few per cent. On adding a 2-per-cent. solution the slowing became much more marked with an exaggerated diastole, apparently an active movement. (2) On another individual, a 1-per-cent. solution produced little effect in five minutes; a 2-per-cent. solution slowed it more distinctly within five minutes more; a 3-per-cent. solution brought the heart to a stand in four and a half minutes, but the heart resumed action immediately almost, and the rate gradually increased up to 150 with an exaggerated diastole and a systole less complete than normal; five minutes later the rate was 180; five minutes later the extreme diastole was gone and the whole heart was beating more flatly than normal at a rate of 155. Other similar experiments showed that chloral hydrate markedly slows the heart, both in rate per minute and in speed of movements, increasing the diastole for a time, and makes its action much more spasmodic than is normal; after a while both of these inhibitory effects wear off leaving heart somewhat weak. The appearance of slow, active and powerful diastole is the chief characteristic of the visible action of this drug on the heart we are studying. Chloretone acts apparently as does chloral hydrate.

Aconite.—A 3-per-cent. aqueous solution of the officinal tincture of aconite added to this animal resulted in an immediate slowing and paralysis of the heart without any special organic or functional features being notable. The heart simply stopped with this strength of the poison.

Chloroform.—Shook up 0.1 c.c. chloroform in 10 c.c. water and added the solution to a *Daphnia.* The bodily organs all almost immediately stopped while the protoplasm darkened generally. The heart continued its beat for some time, at first slowing, then becoming irregular in an extreme degree. There were markedly spasmodic contractions in dystole alternating irregularly with exaggerated diastole for five minutes or more.

Curare.—(1) A 2-per-cent. aqueous solution of curare slowed the heart in a few minutes. The circulation was then opened by a small, harmless incision, and the heart stopped very quickly in a state of collapse. (2) The blood sinus near the spine being opened, the heart beat spasmodically and more slowly than usual. Curare was added and heart stopped at once. (3) Same. (4) Curare seemed to have no constant effect on the skeletal muscles unless circulation was opened.

Digitalis.—A 3-per-cent. aqueous solution of the officinal tincture of digitalis slowed and invigorated the heart, and made it irregular.

In all of these drug poisonings of the heart the general appearance of the heart is different from what it is when the injury is electrical or mechanical, though indirect. The dead state of the heart after poisoning is that of about half diastole, while in traumatic death the size of the heart may be no more than a third, a quarter or even less, of the normal average volume of the viscus.

Several individual *Daphniæ* were caught which seemed to be suffering from an extraordinary degree of leucocythemia. The corpuscles filled almost completely in some parts the blood sinuses and were of double or more the size of the ordinary blood corpuscles. The heart's action showed no abnormality and the circulation and all the other general functions seemed to go on regularly.

IX. SUMMARY.

There is strong physiological evidence that the heart of *Daphnia* has nerves connected with it, the stimulation of which inhibits its action, and evidence of a similar sort, although negative, that the heart has no augmentor nerves.

This heart appears to be an eminently automatic organ and one very independent, especially in its rate of beating, of agencies usually modifying or even destructive.

Puncture of many parts of the brain and body, especially just ventral to the heart and in a supposed caudal ganglion, inhibits the heart for a few minutes only, but in other portions or spots of the brain and body mechanical stimulation produces no apparent effect.

The break and make of galvanic currents tend to inhibit the heart in diastole, and during the passage of the current the diastole is apt to be exaggerated. Induced electricity, unless of an intensity and frequency which disorganizes the protoplasm, has no effect on the heart beyond, sometimes, a momentary inhibition.

Division of the animal into parts inhibits the heart for a time or permanently, according to the mode and places of section. Openings of the circulation's channels lessens both the force and the average size of the beating heart.

When a *Daphnia* dries up, the heart continues to beat after all the other organs are still.

Beef serum absorbed into the circulation has a distinctly invigorating influence on the heart, increasing the force of its beat and the pulse-rate, but not beyond the normal for that individual.

The drugs, alcohol, nicotine, chloral hydrate, aconite, chloroform, curare and digitalis, all have a powerfully poisonous effect on the heart, in general not unlike their respective effects on other hearts.

The embryonic pulse-rate is one-half, on the average, that of the adult animal, which latter may be said to be about 240 per minute. The cause of this needs explanation.

The often considerable advantages of using for many sorts of research small transparent animals such as is *Daphnia*, are perhaps not adequately appreciated by physiologists and researching medical men in general.

MEDICAL PROGRESS.

MEDICINE.

Perforating Typhoid Ulcer.—Not long ago a perforation in typhoid was looked upon as hopeless, but the prognosis has been somewhat improved by the earliest possible operative interference. F. J. Shepherd (Montreal Med. Jour., Jan., 1903) reports three cases of success from operation. His plan is to operate on the appearance of the first signs, not waiting for the unmistakable symptoms, such as rigidity, distention, vomiting, etc., for then it is too late. And it has been shown that patients have done well under operation when no perforation has been found. From operating so early, mistakes in diagnosis are inevitable, but such mistakes are counterbalanced by this apparent harmlessness, where a perforation does not exist, and by the increased chance of recovery when there is a perforation. The author always employs general anesthesia and wastes no time on the toilet of the peritoneum. It is important, too, to recognize and treat other ulcerations that are likely to perforate. In one of the three cases the leucocytes remained subnormal.

Immunity in Syphilis.—Does there exist an individual, natural immunity to syphilis? The answer to this question cannot yet be given, according to Van Düring (Berl. klin. Woch., Jan. 5, 1903). A more practical question, and one more readily answered, is whether or not immunity follows an acquired or inherited attack of syphilis. The belief was long current among practitioners that acquired syphilis imparted immunity to reinfection for a prolonged period. Cases were frequently cited in which reinfection had occurred, but unfortunately the evidence was never beyond criticism and the belief in acquired immunity remained. Furthermore, it has been assumed (the so-called law of Profeta expresses this view) that the descendants of syphilitics possess a certain degree of immunity. As a matter of fact, Profeta did not make the sweeping generalization which is nowadays ascribed to him, but merely said that a symptom-free child, born of a syphilitic mother, can be suckled by its own mother or by a syphilitic wet-nurse without becoming infected. Von Düring flatly contradicts the existence of an inherited immunity, as expressed in the law of Profeta, as commonly quoted. He observed epidemics of syphilis among school-children in villages in Asia Minor, notwithstanding the entire adult population of these villages bore signs of previous syphilitic attacks. In many instances fresh syphilis occurred in children whose parents were unquestionably syphilitic before the children were born. In children presenting saddle-noses and other marked signs of advanced syphilis (probably hereditary) there frequently was present fresh, newly acquired, contagious specific disease. Assuming that the first attack was acquired and not hereditary, these children at any rate suffered two separate attacks of syphilis; of their reinfection Von Düring has no doubt, and he therefore announces himself as unequivocally opposed to the hypothesis of immunity.

Vomiting with Acetonemia.—An attempt has recently been made by Marfan to class vomiting with acetonemia as a separate pathological entity. According to his description, such vomiting occurs in children between one and ten years, who are in apparently good health; but immediately upon the onset of vomiting, intolerance sometimes even for water, is absolute. The characteristic symptom is, however, the odor of acetone in the breath, which is comparable to the breath of patients who have taken chloroform; yet withal it is slightly acid. The same odor is perceptible in the urine when first voided; and acetone is demonstrable by the usual tests. The temperature is but slightly raised, but the persistent vomiting reduces the patient to a condition of exhaustion and depression resembling the condition seen in cholera. M. L. Guinon (Rev. Franç. Méd. et Chir., Jan. 12, 1903) reports a case in which these manifestations were present, though accompanied with obstinate constipation and periumbilical pain, followed by lax stools. The author's experience has been, contrary to that of Marfan, that constipation and digestive derangement are present in those in whom acetonic vomiting occurs; and he leans to the belief that the acetone is simply an evidence of the intoxication which induces the vomiting, rather than that acetonemia is the direct cause of such vomiting. Acetonic vomiting has frequently been noted by Guinon in arthritic patients.

Diagnosis of Leprosy.—The importance of bacteriological examination of the mucous secretion of the nose in the diagnosis of leprosy has been emphasized by Jeanselme; the bacillus of leprosy being frequently found in this secretion from the onset of the disease. Leredde and Pautier (Rev. Franç. Méd. et Chir., Jan. 12, 1903) find that the search for the bacillus may often be facilitated by the induction of abundant nasal secretion through administration of potassium iodide (gm. 4) in one day. In several cases in which examination for the bacillus was negative, their presence was readily demonstrated in the increased mucous discharge which ensued the day after administration of potassium iodide.

Metallic Tin as a Vermifuge.—Metallic tin was formerly recommended for this purpose in the form of powder or filings, associated with mercury, but at the present time it is seldom used. According to the experience of I. I. Dechoosky (La Sem. Méd., Jan. 14, 1903), this metallic, precipitated by galvanism, is an excellent teniafuge. It slowly dissolves itself in the gastric juice, has no toxic action, contrary to the facts about the salts. In a series of experiments upon animals and upon himself, he is convinced of the entire innocence of the metal. In these experiments he began by employing 0.60 gram in powders, repeated five or six times, every fifteen minues. Two hours later he gave three spoonfuls of the infusion of senna and two of castor oil. Prior to employing this medication the patient should be freely purged and kept for two or three days upon a diet which leaves little residuum in the intestines. Twenty-six out of 38 patients were cured at the first attempt; seven required repetition; and five received no benefit after repetition. The total dose, borne without difficulty, was 5 grams. Examination of the urine for the metal was negative; that of the feces was abundant, which indicates that the metal does not penetrate the system. Its teniafuge effect may be due to chemical action within the bowel, which affects the parasite, but not the patient.

Spontaneous Expulsion of a Large Vesical Calculus by a Child.—The rarity of spontaneous expulsion of large vesical calculi would alone make the case seen by Voyer (Gaz. Méd., Nantes, Jan. 17, 1903) noteworthy; but in the remarkable size of the calculus, passed by a girl of but seven years, it stands alone in the 35 cases of spontaneous expulsion of voluminous calculi collected from medical bibliography by Vignard, who reports the case for Voyer. The patient had for four years suffered with cystitis and incontinence of urine, and treatment had been limited to administration of antiseptics by mouth, owing to the intractability of the patient. The child suffered continually till upon one occasion intense pain in the vulvar region set in, and the calculus was passed. This was extremely hard, was 5 cm. long, 3½ cm. wide, 9 cm. in its greatest circumference, and weighed 28 grams. The child's suffering was at an end from this time; though the expulsion of the calculus was followed by slight hematuria and purulent urine. Daily administration of borate and benzoate of soda overcame the abnormal condition of the urine within a period of two weeks, though urinary incontinence persisted. When seen four months later, this symptom also had subsided, and the patient was completely restored to health.

Splenic Souffle.—But rarely is the occurrence of the splenic souffle chronicled, therefore its presence lends a special interest to any case in which it is reported. Such a case came under the care of S. Ceraulo (Gazz. Osped., Jan. 18, 1903), who describes the murmur as similar to the placental souffle in pitch and intensity; its quality being sometimes harsh and prolonged, again soft and of short duration. It is generally synchronous with the radial pulse, and is modified by position and respiration. In the present case, the spleen was much enlarged from malaria of long standing. The numerous hypotheses concerning pathogenesis of the murmur are set forth by the author, but no definite conclusions are drawn as to the manner of its production.

Parasites of Smallpox and Chickenpox.—It will be very satisfactory to have the etiology of these disorders placed on an exact scientific basis. R. S. Thomson and John Brownlee (Brit. Med. Jour., Jan. 31, 1903) as a result of investigations carried on for a period of over five years, formulate these tentative conclusions: (1) There are present in the blood of patients having hemorrhagic smallpox small, spherical, highly refractive bodies. They resemble fat but do not stain with osmic acid. They are found in large numbers from the third or fourth day till death. In confluent smallpox, similar bodies appear on the third or fourth day and are found occasionally after the first week and abundantly in the early stages of both small- and chickenpox. (2) These bodies are found in cross sections taken from hemorrhagic areas. They also appear in the lymph spaces of the skin and in cavities of the smaller blood-vessels. These bodies are morphologically similar to the first mentioned, but differ slightly in their staining reaction. In smears from vesicles, the bodies are usually present and as the pocks grow older, these clear bodies increase in size until they occupy the greater part of the cell, while at a still later date, they are found apparently in a free state. They present no form of nucleus. It is interesting to note the absence of pyogenic micro-organisms both from the smears and skin sections. The authors make no deductions from their paper, which is a preliminary contribution, but state that appearances similar to those described as being present in smears of vesicles and pustules in variola occur also in varicella.

SURGERY.

Suprapubic Drainage in Tuberculosis of the Bladder.—Permanent suprapubic drainage for advanced tuberculosis of the bladder is the subject of a report of a case at the end of five years of this treatment by C. A. Powers, in a paper read before the American Surgical Association, June 4, 1902. To sum up the case, the man was fifty-two years old; had suffered for some time from vesical tuberculosis; had a very small bladder, and almost constant urination. Treatment of the bladder made him worse. A permanent drainage above the pubes gave him relief and finally caused the ulceration to heal. Up to nearly five years after the operation he made progressive gain in health, strength and weight. At this time, the introduction of a badly fitting tube led to discomfort, leakage and possible relapse of the tuberculosis. The author believes that management of tuberculosis of the bladder in its early stages is hygienic involving good nutrition, bodily rest, change of climate, and proper management of the pulmonary tuberculosis which usually is present. Treatment of the bladder with instruments should be avoided, and it should never be defended. Incessant pain and urination in the bladder give the patient comfort and permit improvement in general nutrition and finally conduce to the arrest of the local tuberculosis. However great the discomfort of such a fistula may be, it is nothing when compared to the pain of tuberculosis of the bladder in its advanced stages.

Surgical Treatment of Pancreatic Cysts.—Cysts of the pancreas, while rarely encountered, are still the most common pathologic condition of this deep-seated organ that we are called upon to treat surgically, says A. Morgan Cartledge (Am. Gyn., Jan., 1903). Since Gussenbauer, in 1882, first operated successfully by incision and drainage for pancreatic cysts, there have been collected by Körte and others about 121 cases. Most operators have followed Gussenbauer, that is, incised the cyst, stitched to the perietal peritoneum and drained. According to Böckel, the cases so treated number 115. This author also collected twenty-five cases where extirpation, either complete or partial, of the sac was practised, with four deaths. A comparison of these results, shown by the statistics, would seem to indicate that incision and drainage should be practised as a routine procedure in pancreatic cysts. It is a well-known fact that these accumulations, in and about the pancreas, do not pursue the same anatomical route in presenting toward the surface. This fact should have great weight in deciding for or against complete extirpation. Undoubtedly evolution most often takes place below the stomach and above the transverse colon, the cyst carrying before it the gastrocolic omentum. Cysts so presenting are best suited to extirpation, or, as the author prefers, enucleation. Probably the most frequent evolution of the cyst is above the stomach, or between the stomach and the liver. Such a cyst, if adherent at all, would present the gravest dangers in its enucleation. Can the manner or direction of the growth be ascertained with sufficient accuracy as to enable us to select a method procedure? Oftentimes the physical signs presented by the tumor will suggest this. The cyst which has evolved above the stomach is on a high plane and much more fixed than below. Cysts presenting below the stomach tend to displace the pancreas downward by traction and so induce a condition of otosis of this and surrounding organs. So great may this tendency be that acting in conjunction with deep inspiration on the part of the patient, the operator may carry the cyst almost to the pelvic brim. Finally the question may be settled by a sufficiently long incision in the abdominal wall as to permit of inspection. That extirpation is the best ideal operation, did safety permit, few would dispute who have had experience with incision and drainage. The latter is slow and disagreeable to a tantalizing extent, both for patient and surgeon.

Surgical Interference in Rheumatic Fevers.—While defending early surgical interference in rheumatic fevers, J. O'CONOR (Lancet, Jan. 14, 1903) deprecates very strongly any attempt at the same unless the operator is convinced that he commands all essential elements to carry out an ordinary aseptic operation. It is obvious that under septic conditions this method may be followed by greater danger than is inherent in the disease itself. The dictum which he lays down is, Do not puncture, but open the joints in this disease, and drain them rather than cork them up. The matter of drainage is most important, in his opinion, in these cases, and to close such a joint would be foolish. He recommends an inch incision in the knee, for example, on each side of the joint, through the capsule. Through these openings a rubber drainage tube is passed, from side to side, one-half inch in diameter, and the joint irrigated daily with some convenient antiseptic. On the third or fourth day the tube is removed. The irrigation of the joint, however, is continued each day until healing of the wound no longer permits the passage of fluid. In opening the wrist and ankle, drainage is best carried on by means of gauze rather than rubber tubing.

Geographical Distribution of Stone and Calculous Disorders.—Although in this country there is not the same variation in the distribution of calcarious diseases as in England, or the British Isles, more properly speaking (for the whole of Ireland is practical exempt), it is of interest from a purely etiological standpoint to note how great this variation is in other countries. REGINALD HARRISON (Brit. Med. Jour., Jan. 17, 1903), in an address to the Egyptian Congress of Medicine, discusses this mooted point in considerable detail. There are two kinds of calculi whose etiology is positively known, viz., those formed on foreign bodies and on the ova of bilharzia. The type of stone which forms as a complication of enlarged prostate falls in an entirely separate category. So great is this latter class that due to it alone, the life expectancy of Englishmen is ten years greater than that of the Hindoo. Rainey's views on molecular coalescence relative to the causes and formation of stone can readily be substantiated since, with patience and a careful following of his process, stones can readily be manufactured outside the human body. This question of stone formation has not been followed up as closely as it might profitably be. We know too little of this important matter, which even in countries relatively free from the disorder has profound interest to those afflicted. Out of 110 operations performed by Harrison, 23 suffered from recurrence. These he divides into two classes, (1) those where the recurrence was limited entirely to the bladder; phosphatic; (2) those in which the concretion was evidently of renal origin. Following Rainey's views of molecular coalescence, the author has been able in many cases to abort the process of concretion. The preparation called "Dutch Drops," which was largely used as a prophylactic a century ago, a mixture of oil and turpentine, of guaiacum and nitric ether, amber and cloves, though so old, is of the utmost value. It may be taken in capsules. A salt called boracite, sodium salicylate and benzoate, as well as urotropin, have all been used by Harrison and found of value. In dealing with the condition, whatever method be used, it is important to remember that stone is a symptom and not a disease.

Injections of Calomel for Ulcer of the Leg.—The success recently obtained by A. I. Pospeloo in treating elephantiasis by subcutaneous injections of calomel, induced G. I. METKOWSKY (La Sem. Méd., Jan. 21, 1903) to employ the same drug and method of administration in a woman, twenty-six years old, suffering from a varicose ulcer of the leg of seven years' standing, accompanied by a pseudo-elephantiasis, which had resisted all the recent and standard remedies employed. He used 0.05 gram of the protochloride of mercury, hypodermatically, and locally upon the ulcer he laid wet dressings of boric acid, three per cent. with care to make the dressing reach from the malleoli to the knee. Five days after the first administration, the grayish, unhealthy, adherent membrane over the ulcer came away easily, and soon granulations upon its surface appeared. Epithelium soon sprouted and covered the ulcer rapidly. At the end of a month there was not the least trace of the ulcer and the scar appeared solid and sound.

Intraperitoneal Rupture of the Bladder.—The comparatively fixed position of the bladder renders it a little more likely to damage when filled and in the line of a blow upon the lower part of the abdomen. D. F. JONES (Ann. of Surg., Feb., 1903), in reporting two cases of this rather fatal disease, draws attention to the following symptoms, which are regarded as practically classical for this condition: sudden severe pain in the lower part of the abdomen, remaining constant; a constant desire to urinate, with inability to do so; the preference for the erect or partially erect posture of the body, rather than the recumbent; general abdominal tenderness, with but little or no rigidity. In each of his cases the abdominal wall was so lax that it bulged with the pressure of free fluid in the abdomen. A small quantity of bloody urine in the bladder is common, and dulness in the flanges likewise. As an aid to diagnosis, he does not recommend Walsham's method of injecting air into the bladder. It seems to result in intense pain and collapse with cardiac and respiratory disturbances. He likewise thinks that the boracic test is one of the most fruitful causes of general peritonitis in these cases, and should not be carried out in these cases unless the patient is to be operated on immediately.

Radical Cure of Aneurism.—This surgical condition has no truly successful treatment unless it has involved a total removal of the sac, which itself may fail, should the collateral circulation be intestinal. R. MATAS (Ann. of Surg., Feb., 1903) offers the following conclu-clusions concerning a method of suture within the aneurismal sac and the connection between it and the main channel. He says that the favorable statistics of the last decade may be greatly increased by adoption of this method of suture,—an obliteration of the sac, instead of the classical ligation of the arteries, with or without extirpation, the closure of the arterial orifice, supplying the sac, whether single or multiple, by sutures, and within the sac simplified technic of the other operation. A favorable case, namely, saccular aneurism, with one orifice into the trunk, is best. It is possible, by these sutures, to close the lumen without narrowing the main channel. In fusiform, traumatic aneurisms, and in all with a healthy, friable sac, lost continuity of the arteries may be renewed by building a new channel and connecting the main orifices of communication. The fear that atheroma and degeneration will interfere with healing has been exaggerated, especially since it has been shown that amputations in aged patients, with scarrosed arteries may well succeed. The failure and danger of the old operation of antillus lie in the fact that ligation of the main artery, above and below the sac, will not always control the bleeding from collateral vessels opening into the aneurism, or into the main trunk between the arteries of the sac and the seat of ligation. The cutting of the sac away has the danger of interfering with collateral circulation. The operation of antillus, moreover, leaves the sac as an open cavity in the bottom of the wound, which heals by granulation, and induces infection, suppuration and secondary hemorrhage. All these difficulties are increased by the extirpation.

Abdominal Contusions.—Among the symptoms which point to injury to the abdominal bones, G. E. BREWER (Ann. of Surg., Feb., 1903) states that from observations of some 20 cases of visceral injury, following contusion of the abdomen, verified by operation or autopsy, the most prominent were pain, tenderness and muscular rigidity, and likewise the most reliable. The deep-seated, localized pain following injury, and especially increased by pressure, and accompanying local or general muscular rigidity, is one of the most constant signs of intra-abdominal injury. The association of these three symptoms is almost pathognomonic of abdominal irritation. Pain, however, is often present with tenderness in injuries limited to the abdominal wall, but in these instances muscular rigidity is generally absent. In the absence of subcutaneous pain, localized tenderness with rigidity is strongly suggestive of visceral injury. Of the three symptoms, muscular rigidity is the most reliable, and sometimes the only sign. In the absence of other diseased conditions, spasm of one or more of the abdominal muscles following the traumatism may be looked upon as nature's effort to protect an injured organ from further irritation. Vomiting is a symptom often present, but not always an accompaniment of severe visceral injury. It is commonly present with involvement of the stomach and upper part of the intestinal tube, and with injuries resulting in severe shock. The signs of free fluid in the abdominal cavity are very suggestive. With this connection a large amount of fluid feces in the colon may sometimes lead to error. Free gas in the peritoneal cavity is also a valuable indication of rupture of the alimentary canal. In the absence of meteorism, this would be indicated by abnormal tympanites and an obliteration of the liver dulness. With regard to specialized diagnosis, this writer states that in the majority of cases within his observation, the symptoms and signs are rarely so localized and characteristic as to warrant an exact diagnosis as to the site and character of the injury.

Osteopsathyrosis.—An unusual case of this rare lesion of the osseous system is reported by M. H. BIGGS (Univ. of Penn. Med. Bull., Feb., 1903), in which 22 fractures occurred in an adult within a period of ten years. The case occupies a position midway between the two types of the disease, with reference to the age of the patient,—first, in that the disease made its appearance in the twentieth year, and secondly, that after perpetual manifestation for a period of ten years recovery seems to have taken place and no fractures have been noted in the last five years. The previous and family histories are negative. He first fractured his humerus on lifting a box, and then in succession the other humerus, both femora and one rib,—about two fractures per year. His general condition has remained very good, but there has resulted marked deformity in arms and legs, with some muscular wasting and the height is only four feet and seven inches, due mostly to shortening of the femora. The radiographs showed variations in the density of the bones and a comparatively smooth outline, showing the absence of callous formation. The case reported is of the idiopathic form of fragilitas ossium, careful inquiry and examination failed to reveal any of the conditions which produce a symptomatic fragility. A general tonic and sustaining treatment was employed, no specific being known.

An Original Operation for Gastroptosis.—Among the procedures lately devised for the relief of this condition is an operation by H. D. BEYEA (Phil. Med. Jour., Feb. 7, 1903), first done in 1898 and which has since been repeated in four cases. The principle of the operation is that, by placing three rows of interrupted silk sutures from above downward and from right to left through the gastrophrenic and gastrohepatic ligaments, a broad transverse fold or plication is formed in shortening these ligamentary supports and elevating the stomach to its normal position. This does not interfere with the physiological mobility or functions of the organs. The operation practised by several operators depending on the formation of adhesions between stomach and abdominal walls interferes with these functions and is often productive of disagreeable after-effects. In all cases operated by this method and the similar one of Bier, eight in number, have shown marked improvement. The author believes that mechanical and medicinal treatment of gastroptosis, will soon be superseded by operative measures.

Suture of the Brachial Plexus in Birth Paralysis.—It is fortunate indeed that some sure method of restoring the functions in these frequently hopeless cases seems at last to have been devised. ROBERT KENNEDY (Brit. Med. Jour., Feb. 7, 1903) gives a history of three cases in which he has successfully performed neurrhaphy in the affected part. He regards electricity as of little value in the treatment of these cases and uses it for diagnostic purposes only. The pathology of the condition is known in most cases to consist of a rupture or excessive stretching of the motor nerve fibers which run in the anterior divisions of the fifth and sixth cervical nerves. The lesion is in the true sense congenital, being caused by a trauma from excessive traction either in the case of cranial presentations or in those in which version has been performed. In whatever way the lesion is brought about, the chief factor consists probably in forcible depression of the shoulder while the head is bent to the opposite side and rotated. The attitude of the arm is very characteristic due to the paralysis of the deltoid and supraspinatus. This prevents abduction. Flexion of the forearm is negative because of the paralysis of biceps, brachialis anticus, and supinator longus. Because of the involvement of the supinator brevis there is usually extreme pronation. The prognosis in these cases is as variable as it is difficult to establish. This is because the nerves may be broken entirely or may be simply stretched, and their union or lack of union depends on the amount of scar tissue that forms. The operation of suturing them is not attended by great risk and it may safely be delayed until the child is two months old, if the faradic stimulation gives a marked reaction, however, it should be deferred, because these cases recover naturally. The technic of the operation is given in great detail. After the suture of the nerves, the rate of recovery is variable. In some cases, it begins as early as the third month and may be considered to be complete at the end of nine, but in older cases a much longer period is to be expected before any improvement is met with.

OBSTETRICS.

Anterior Transplantation of the Round Ligaments.—In order to leave the uterus free in the abdominal cavity with no stitches or bands attached to it an operation was devised several years ago by A. H. FERGUSON (N. Y. Med. Jour., Jan. 17, 1903), in which a transplantation of the round ligaments is performed for the purpose of replacing an abnormally situated uterus. Over two hundred such operations have now been done by him without a death or complication except suppuration in the external wound in three cases. The Trendelenburg position is used and a median incision three inches in length is made through the abdominal wall, the lower angle reaching the suprapubic fold. The skin and fat are dissected from the anterior sheath of the rectus on either side. Two fingers are passed into the abdomen to protect the bladder and a stab wound is made through the rectus between the two fingers, an inch from the median line and an inch and a half from the pubes. Before withdrawing the knife pass a pair of forceps beside it through the wound and seize hold of the round ligament and a portion of the broad ligament near the uterus. In order to prevent the bowel or omentum subsequently slipping between the ligaments and bladder and causing strangulation a suture is now inserted running along the parietal peritoneum from the puncture in it downward to the bladder and backward to the round ligament near the uterus. In this circular sweep the peritoneum is caught up about every third of an inch and when the suture is tied on both sides an antero-posterior partition of folded peritoneum is thrown between iliac and bladder regions on either side. The proximal end of the round ligament is then withdrawn through the rectus with the forceps and sewn with the subjacent broad ligament to the anterior sheath of the rectus muscle, leaving a stump about half an inch long between the uterus and the anterior abdominal wall. The other side is dealt with in the same manner. The operation is easy to perform because all the structures are seen as well as handled, there is no subsequent interference with the physiological functions of the uterus and the range of application is much wider than in any other similar operation.

Labor With Double Uterus and Vagina.—The case of a woman in whom both uterus and vagina were double, without the slightest communication between the cavities, is reported by H. D. WILLIAMS (Buffalo Med. Jour., Feb., 1903). The woman becoming pregnant, the fear arose that if she went on to term with such a septum, delivery might result in rupture of the bladder or rectum. It was therefore decided to dissect out the vaginal septum. This being accomplished, pregnancy proceeded normally and the patient gave birth to a 7½-pound child. Examination some two months later revealed but one uterus and cervix; the partition having been completely obliterated in labor.

GENITO-URINARY AND SKIN DISEASES.

Alopecia Areata.—Alopecia areata was first experimentally produced by Max Joseph, who by division of the second cervical nerve in cats obtained a condition resembling the alopecia areata occurring in human subjects. His experiments have since been successfully imitated by two Russian observers—Moskalenko and Ter-Gregoriantz. These experiments must be considered as telling strongly against the hypothesis of an infectious origin of alopecia areata. A singular clinical history reported by E. RICHTER (Berl. klin. Woch., Dec. 29, 1902) further supports the views of Joseph. Richter's patient tumbled out of a wagon and after recovering from the shock of the fall felt a sharp pain in the vicinity of the second and third cervical vertebræ. She has experienced since the accident a burning sensation in the occipital region, and cannot without pain lie with her head resting on the right side. Sagittal or lateral motion of the head and neck produces a rubbing sound which can be plainly heard, and the patient experiences during such motion a sensation as of rubbing and grinding which is less painful than annoying. The signs resemble those of a tenosynovitis. Paroxysms of pain occur at this site every day, and are accompanied by a burning sensation in the right cheek and pain in the right eye. A year and a half after the receipt of her injury the patient became bald in two circular spots in the occipital region. She is otherwise a healthy woman with a rich growth of hair extending below the waist. The patient gives no history of syphilis. The exact extent of the injury in the cervical region cannot be determined; but there is evidently a nerve lesion, as manifested by the neuralgic attacks which affect the side on which the rubbing sounds are heard. A clear explanation on anatomical grounds of the distribution of the pain and the alopecia, is not forthcoming; Richter therefore assumes the existence of sympathetic nerve fibers, which have undergone atrophic or degenerative changes. It remains to be determined whether Joseph's experimental alopecia areata is not really due to trophic alterations affecting sympathetic nerves. In Richter's case the hairless parts have retained normal sensation, reacting to heat, cold and electricity.

Prolapse of the Female Urethra.—Acute prolapse of the urethra occurs not uncommonly in children, and is also occasionally seen in old women, usually associated with senile changes and a general laxity of the genital tract. In the light of its rarity in middle life, A. W. W. LEA (Brit. Jour. of Obstet., Jan., 1903) reports a case which is quite interesting. The patient ten days previous to consulting the doctor, while straining at stool felt a sudden pain in the vulval region, and noticed that a swelling had appeared there. This rapidly enlarged and caused pain on voiding, with severe pains over the hypogastrium. There was also slight hemorrhage after passing her urine. At the examination, on separating the labia, rounded mass was seen to occupy the situation of the urethral orifice, and also projected beyond the labia minora. The swelling was rugose, deeply congested, being almost black from effused blood. The tumor was very sensitive and bled on being touched. The general appearance resembled the ring of hemorrhoids though much smaller. The other organs and adnexa were perfectly normal. The condition was evidently one of acute prolapse and strangulation of the urethral mucous membrane. The mass was excised, and to avoid a return of the condition, a wedge-shaped piece of the lowest part of the urethral membrane was also removed. Cure was effected after several weeks. The subject of prolapse of the urethra has been recently fully considered by Voillemin, in Thesé de Paris, 1900, in which a full account of the literature is given.

Favus Scroti, Coexistent with Ringworm of the Thigh, Giving Identical Trichophyton-like Cultures.—A curious case in which two, usually regarded as distinct diseases, but caused by the same organism, is reported by A. D. Mewborn (Jour. of Cutan. Dis., Jan., 1903). His conclusions are that while it would seem unwarranted to decide upon the essential identity of the achorian and the trichophyton from a single isolated case, it does seem that this single example may be regarded as one in which the trichophyton on the same patient, but in different parts of the body, where the conditions of soil were different, produce two clinically distinct diseases, namely, favus and ringworm. The organism was an undetermined megalosporon of probably animal origin. The irregular and interlocked mycelium found in the favus cups were then only degenerated forms, due to a lack of the best conditions in the soil for vigorous development. This conclusion seems to concur with the experimental study of the *Achorion Schoenleinii* made by Bukovsky in which he found that the more indifferent the skin is to the fungus, the more likely it is to show the favus cup. The stronger the reaction of the skin against the mycelium, the less will be its tendency to scutulum building.

HISTOLOGY, PATHOLOGY AND BACTERIOLOGY.

A Leucolytic Antileucemic Serum.—Through inoculation of rabbits and sheep with the sedimented leucocytes from the blood of leucemic patients L. Lucatello and C. Malon (Gazz. Osped., Jan. 25, 1903) have succeeded in procuring a serum which exhibits, in vitro, a marked leucocytic power toward the leucocytes of leucemic blood, and also toward those of certain exudates, such as the pleuritic. By adding a small amount of neutral potassium oxalate to prevent coagulation, the authors were able to obtain a large quantity of leucocytes by allowing the blood withdrawn from the patient to stand a few hours, in which time a broad stratum of leucocytes was distinctly separated from the underlying red cells. Three rabbits of medium size received endoperitoneal injections of from five to ten gm. of the leucocytes thus obtained; each receiving forty-seven injections within thirty to forty-five days. Nine endovenous injections were given to a sheep, at intervals of two to twelve days, about 120 gm. in all being given. These endovenous injections were well supported by the animal save in one instance when 10 c.c. were injected rather too rapidly. A single subcutaneous injection of 20 c.c. was then given. The first specimens of blood were withdrawn from the animals after twenty injections had been given to each; subsequent specimens being taken at intervals of from five to fifteen days. The leucocytic action became manifest upon the twenty-fifth to the thirtieth day after the first inoculation, and reached its maximum on the forty-fifth day. No appreciable difference between the leucocytic action of the sheep and rabbit serum was apparent. This leucotoxic effect was exerted upon all the leucocytes of the blood; its influence being equally marked upon the lymphocytes and the splenomyelogenous group of white cells; but both poly- and mononuclear eosinophiles showed a certain amount of resistance. Daily injections of the serum to the amount of 5 c.c. each were then administered to three leucemic patients; and while the effect produced was not as marked as that seen in vitro, yet it was sufficiently encouraging to justify the belief in the future therapeutic value of such a serum. In the first and most favorable case there were 560,190 leucocytes to the cubic millimeter before treatment, and this number was reduced after twenty-six injections, to 375,720. A gradual decrease in the size of the spleen also took place. In the remaining two cases, diminution in the number of leucocytes was very slight, though there was noticeable shrinkage of the spleen in both.

Diplococcus Phlogogenus Pleuro-Pulmonaris.—What he believes to be a micro-organism not hitherto described has been found by L. Plasencia (Rev. de Med. y Cir., Jan. 25, 1903) quite constantly in the sputum of patients in whom appear congested pulmonary areas followed by pleurisy with or without effusion, after initial symptoms closely resembling those of grip. The fact that the sputum in such cases soon becomes muco-purulent or purulent and blood-streaked leads the author to the belief that suppuration or even abscess-formation takes place in the congested areas, and that the pus therefrom is evacuated through the expectoration. Neither elastic fibers nor crystals are found in microscopical preparations of such sputum, but white cells, chiefly of the polymorphonuclear variety abound; and red cells, fibrin and alveolar epithelium are also seen. The pathogenic agent in these cases Plasencia believes to be the micro-organism to which he gives the name of *Diplococcus phlogogenus pleuro-pulmonaris* and which he describes as cocci of hemispherical shape, disposed in pairs, their flat surfaces facing and separated by a small space. Though the appearance of these cocci suggest the gonococci of Neisser in size and disposition, the form is said to differ materially from that organism; and they are slightly motile. Alcoholic solutions of the basic aniline stains color these organisms well, but their aqueous solutions stain them unsatisfactorily. They are aerobic; stab cultures in solid media especially requiring abundant air. Most of the culture media in general use serve for their development. The author made inoculations of such cultures in animals; and in the lesions so produced, and symptoms of patients in whose sputum these diplococci were seen, he finds his justification of the name given them.

PHYSIOLOGY.

Action of Suprarenal Extract.—It has been stated that subcutaneous injection of this extract exerts no influence upon the blood-pressure and this failure was assumed by many to be due to an oxidation by the tissues of the drug. From recent experiments S. J. and C. Meltzer (Am. Med., Feb. 7, 1903) find, however, that prolonged contact of the blood with the extract does not deprive the latter of its effect on the blood-pressure. Intravenous injections of adrenalin in rabbits in which the blood-vessels of one ear were deprived of the vasomotors, showed a blanching of the ear of the operated side which lasted longer than that on the normal side. Following this the normal ear became perceptibly more congested than before the injection. This seems to show that the extract favors vasodilation when the central nervous influence is intact—when the latter is absent, constriction results. The authors also demonstrated that subcutaneous injection in the normal animal had no effect on the pupil and very little constricting effect on the blood-vessels, but when the sympathetic nerve was cut the pupil remained dilated for a considerable time and vascular constriction also lasted for an equal period.

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SEX AND DISEASE.

IT is a tradition of hoary antiquity that women live longer than men. Its origin is unknown, but in empiricism, which is only the common language of a people, there is often a bottom of truth, for it is but the summing up in crude thought of the lessons of real human experience. As Maudsley would put it, "reflecting the vital hold of things which living contact with them imparts, they fail not to throw valuable light on the origin and development of ideas."

In his work on "Man and Woman," Havelock Ellis speaks of the greater resistance of woman to disease, and Humphrey, writing on "Old Age," attributes to woman a natural inborn quality of resistance to dissolution that is not a product of her social environment, but the result of heredity. Thus he, as well as others, have pointed out that in the early years, before the influences of variation in the social environment of the sexes become operative, more male children die than female children, and the statistics of the death tables of Prussia from 1871 to 1881 show that from the very first year more female children live to grow to old age than male children. Thus at the end of the first year of 100,000 births, 74,724 male children and 78,260 female children are alive; at the end of five years the figures are 64,871 to 68,126; at ten years, 62,089 against 65,237 and at fifty years, 41,228 men and 45,245 women. Humphrey also quotes that in 1873 eighty-nine people died who were over 100 years of age and of these only 10 were men.

While statistics may point out in so striking a manner what seems to be a condition, they cannot reveal any causes for the phenomenon and a legitimate inquiry arises as to what factors in sex differentiation this peculiarity may be due.

Are there diseases peculiar to one sex and not to another? Möbius has said that he knows of no disease peculiar to men, whereas there are diseases in women that are peculiarly their own. In making this distinction due attention should be paid to the fact that the localization of a disease should not be confounded with a disease process itself. Thus epididymitis has its analogue in ovaritis, etc.

Möbius further shows ("Geschlecht und Krankheit, 1903") that whereas there are few diseases found in one sex that are not generally shared by the other, that in certain diseases the man bears the brunt of his misfortune in being born of sterner stuff. Thus of bleeders, he quotes Grandidier, who shows that in Germany in 93 families of bleeders with 258 patients, 226 were men and 32 women; in England of 46 families, 141 bleeders were distributed in the unequal proportion of 134 men to 7 women. His entire study yielded 630 bleeders in 194 families, of whom 584 were men and 46 women, or 92.6 per cent. men. Litten has shown a similar disproportion of 13 to 1 in 200 families. Man's tendency to bleed for himself as well as for his country is thus made evident.

For diabetes mellitus many statistical studies seem to show that twice as many men as women die of this disease. Brain tumors have a tendency to inhabit the manly brain in a proportion of 440 men to 210 women, but, as Möbius suggests, the brain perhaps is a purely male organ, hence this disproportion is not surprising. Leucemia and hay-fever are quoted by this same author as preponderating in men.

Of the typically female diseases he gives a formidable list. Chorea is peculiarly more prevalent in females; torticollis, goiter, myxedema and exophthalmic goiter are also put to the credit of femininity. Chronic rheumatoid arthritis is also a favorite with women, Garrod quoting 89 men to 411 women; Bannatyne, 41 men to 252 women. Hysteria is almost entirely their own, and Kraepelin has insisted on the great preponderance of manic depressive insanity in women.

When, from the standpoint of social conditions, the same question is considered, certain marked disproportions are manifest. Cholelithiasis, by reason of the dictates of fashion, is three times as common in women. Wandering kidneys may be attributed to similar frailties. Gastroptosis assumes a proportion of 90 per cent. of incidence in women. Because of peculiar forms of work or exposure, smallpox, yellow fever, tetanus, dysentery, and sciatica play much more havoc with men than with women. Syphilis and alcoholism may almost be said to be man's particular property, and cirrhosis, nephritis and arteriosclerosis follow in their train.

The conclusion of the whole matter our gifted author finds in the slow murder of the so-called social factors. The stress of work is one element, but far outweighing this factor are alcoholism and venereal disease. Eliminate alcohol, gonorrhea and syphilis and men will outlive the women, says our author, and thus he would deal the death blow to the theory that woman has a natural resistance to the forces of death greater than that of man.

DOES THE PRACTICE OF MEDICINE PAY?

It is to be presumed that when a man starts in to practise he does it as a means of livelihood; and yet, whether or not there is a livelihood in the practice of medicine, is a much mooted question among physicians themselves.

Any after-dinner conversation among doctors is apt to turn upon the subject. No one will exactly state his own case, but all will discuss the probable validity of the report that such an one is making twenty thousand a year, and that such another does not make his office rent. Someone will always quote the fact that the average income of a physician in New York is but $1,200 a year; and then there will follow an inventory of the necessary aids to an income, such as a rich wife, a private fortune, a professorship, speculation in stocks, or unbounded gall. Some one of these cash men, silent as to his own income, hints at a probable source of his brothers' prosperity.

No one will come out frankly and squarely, as Dr. George R. Patton has done, and discuss the practice of medicine from a business point of view. In his little paper "Does the Practice of Medicine Pay?" reprinted from the *Northwestern Lancet* and sold to the profession for 10 cents, he has a sensible talk with his brothers on the business methods necessary to establish a good practice.

He waives all discussion as to methods of obtaining patients by social tricks and simply says that only courteous manners and professional skill, combined with sympathy in the sick room, will make a growing practice.

His text is that it is easier to get a clientéle than it is to get the money to pay for it and it is by far harder than both combined to keep the money after it is collected.

He lays down as a first law that a fee is only half earned when services have been rendered and that the other half of it must be earned by collecting it. He then offers very sound advice on methods of collecting and says, from the consensus of many opinions, that the income from practice is the most satisfactory when made by monthly collections. Business men, he states, would have immense losses did they collect quarterly. If they collected semi-annually they would probably fail.

Bills should, at all events, he says, be collected quarterly and, if possible, should be made through a collector who keeps the books and makes out the accounts.

There is a good deal of false effort put on by our profession. Many a man who needs the money will not send a bill more than once a year, or possibly six months, in the sublime hope that he may be thought to be unneedful of it, as the well-known physician whose income is supposed to be in direct proportion to his lack of concern about it.

This direct appeal to physicians to be sensible, accurate, and thrifty is a healthful one. In these days of free clinics, abundant hospital privileges, and charitable organizations a physician is supposed to be more interested in his noble calling than in his income, and the more he feels the need of funds the more he fears to show it by doing anything that might be called commercial.

But, according to Dr. Patton's philosophy, the doctor does his patients a kindness to send them small bills frequently and to save their self-respect by not permitting them to get into arrears. He teaches himself self-denial by forming a habit of saving a definite proportion of his income and he increases his own and his patient's respect as well as his family's comfort, by not being too proud to be known as a good business man and a careful collector.

ARE WE IMPROVING OUR OPPORTUNITIES?

"The whole world's queer but thee and me, and some days even thee's a little queer, Rachel!"

ALTHOUGH the speaker and the good, quaint sect to which he belonged are long since dead, the truth of this saying is unaltered, and it forms an integral part of the creeds of the much more mundane and crafty sects which have succeeded. Whether we look at Isaiah 3d, as the latter days prophet Dowie styles himself, or at the leaders of those fanatical farmers who, a year ago, forsook all and journeyed out into the windswept wastes of Manitoba in fantastic quest of the Saviour, or contemplate the doings of the Point Lome mystics who in their Aryan Temple derive their inspirations from the visions of starving children or at any one of a hundred others—but one conclusion is possible, that these leaders, who profess so much, in reality give nothing and have created nothing.

Is it necessary, is it right, is it true to the traditions of the art we practise, that individually and collectively we should yield without an effort to retain or regain it, the care of that host represented by the new sects to the ignorant layman, or, as is too often the case, to the charlatan and the quack?

The longer we practise medicine the more distressing becomes our appreciation of our utter lack of preparation to cope with the finished art of the mind-healer and the layer-on-of-hands. It is largely our own fault and the reaping of our fathers' sowing that we have not yet awakened to the simple truism that mind predominates matter. In our sometime obstinate refusal to give guidance and sympathy to the obsessions of our patients we are often deliberately giving them into the bondage of the charlatan. Some of us are too lazy to study and minister to the psychical phenomena of patients—it is easier by far to say to them, "Tut! tut! away with your delusions!" As average practitioners, are we not so hidebound in our arrogant love of the physical as to render us impervious to psychical phenomena?

While we may not like it, the fact remains that much leaven has come to medicine from extra-mural sources. A great deal that is very, very good for our patients has been crowded down our throats. Was not Tamplin an ostracised quack until a wealthy and iconoclastic Englishwoman allowed him to operate upon her son's clubfoot? Her song of cure resounded throughout England, making Tamplin and his method which, as a wandering vagrant, he had learned in the south of France, the talk of the day.

Now we give one one-hundredth the dose of calomel used by our grandfathers. The same good old gentlemen used jokingly to say that Farragut need never have had so much bloodshed on the lower Mississippi; one grain of Epsom salts in the headwaters of the river would have devastated Louisiana with dysentery and saved the lives of countless soldiers! The sect that these old men derided is but sparingly found among us, but it is still teaching many truths, from which we have strayed since the days of Hippocrates II.

To-day our city is swept with a wave of vegetarianism. Many are the attractive restaurants where for little money may be had such delicate dishes as "Vegetarian Irish Stew;" "Timbale of Mock Chicken." See the type of man and woman eating the "natural foods that grow upon God's plants and vines and fruit and nut trees." They do not recognize the platitudes, if their empty bellies do, for has not the crafty manager printed on every bill of fare, "Opinions of Eminent Scientists." Poor old Cuvier and Linnæus and Virchow masquerading in expurgated phrase and sentence and made to prove that man is a mycophagist. It is cleverly done. There is not one physician in a thousand who could successfully knock the props from under these bombastic and impudent arguments. There is no more exact or delicious description of the craft, and of the cunning they display in their appeals to the masses than the following lines from a well-known author: "The old platitude will prick with pleasing surprise many minds when it has been enucleated from the gross crudities of ill-digested thought and jolting jargon of maimed and dislocated grammar in which the affectation of the charlatan, eager, mountebank-like to draw vulgar attention to himself and his wares, has deliberately chosen to involve it."

Here then lies the secret of the success of the charlatan and the quack. We are not making the most of our opportunities. If men and women are free from organic disease, yet lacking proper psychical training we often take little interest in the case, and are often at a loss both as to diagnosis and to treatment.

We have learned from the quack Tamplin: we have modified our therapeutics by reason of the many pathies, but in each case only by having it beaten through our conservatism. Are we now far enough advanced to grasp the opportunities which come, or must we be hounded into action by popular opinion? Let us *now* take the tiller and sail the ship of our heritage, treating the soul-sick man as well as him whose body is diseased.

ECHOES AND NEWS.

NEW YORK.

American Pediatrics and English Reviewers.—In a recent review of Dr. L. Emmet Holt's work in the *Lancet*, March 14, the following is worth quoting, coming from so high a source: "As a work of reference on the diseases of children we regard this recent edition of Dr. Holt's book as even more complete and trustworthy than the last edition of Professor Baginsky's classical work on the same subject. . . . Moreover, it is more readable, more practical, and more up-to-date. In fact, in our opinion, there is no work on the subject of the diseases of infancy comparable with the volume under review, and with the exception of Dr. Rotch's 'Pediatrics,' no book with which we are acquainted contains anything like such full, systematic, and accurate directions for the feeding of infants, either in health or disease."

$50,000 for a Ward in Manhattan Eye and Ear Institution.—Mrs. Ann Augusta Thomas, widow of General Samuel Thomas, and her children, Mr. Edward R. Thomas and Mrs. R. Livingston Beeckman, have given $50,000 to the Manhattan Eye, Ear and Throat Hospital to endow a ward of ten beds, to be known as the "Samuel Thomas Memorial Ward," in the proposed new hospital building for that institution.

The Registered Nurse Bill.—There was another hearing last week on the bill to give graduate nurses who pass a Regents' examination the designation of R. N. (Registered Nurse). Several amendments have been made, but physicians still insist that the examining board should not be composed exclusively of members of the Nurses' Association. They hold that male nurses should be represented, as there are needful questions which no woman could ask; and they believe also that there should be one or two physicians on the board.

Cornell University Medical College.—The Regents of the State of New York through President Schurman, recently asked the Faculty of the Cornell University Medical College to suggest an outline of a medical course which they considered ideal for the average student of medicine. The Faculty have had to consider a course which is suitable for two classes of students, those who have had the advantages of an academic or a scientific education and those who have come directly from the high school, as the policy of the University has been to keep its doors open to all who apply within the widest limits consistent with any technical education. The policy throughout is to induce men to pursue the study of natural science as early as possible, and for admission, students, instead of being allowed to matriculate with *any* 48 Regents' counts, must present a certain amount of mathematics, and a thorough knowledge of the English language. This is controlled by an arrangement with the Regents who specify on their certificates the above matter, and state that it fulfils the Cornell requirements. A knowledge of Physics and Inorganic Chemistry is an essential throughout the study of medicine, and should be a requisite for admission to the course, but as yet it is scarcely touched upon by many, even of the academic curricula, and, therefore, the Faculty have felt compelled to allow the subject to remain in the first year of the medical course. To pave the way for its abolition as speedily as possible students who present satisfactory certificates of having completed these courses, or who can pass examinations on them are excused from all Physics and Chemistry in the first year and given the Physiological Chemistry, which is placed in the second year. A general outline of the four years' course is then divided in two periods. During the first two years the fundamentals of Anatomy, Physiology, Organic Chemistry and Bacteriology are covered, and during the final two years Medicine, Surgery and Therapeutics or Materia Medica, with the allied branches and the specialties are taken up and completed. To induce men to come better prepared and to allow for the more capable and industrious, the curriculum is so arranged that much of the final two years of the ordinary course can be anticipated, beginning with the second year, and the time thus gained in the final year is devoted to practical dispensary and hospital training.

The first year contains Anatomy, Normal Histology, Physiology, Biology, Inorganic Chemistry and Physics. Those who enter with Biology, Inorganic Chemistry and Physics are excused from these subjects, and take the Organic and Physiological Chemistry, Bacteriology and Pharmacology of the second year. The latter year contains Anatomy, with the histology of the nervous system and the organs of special sense, Physiology, with organic and physiological chemistry, Pharmacology. Bacteriology, Gross Pathology and the principles of Medicine, Surgery and Obstetrics. Those who have anticipated some of this in their first year are given Toxicology, Materia Medica, and mannikin obstetrical work in the third year, and in addition short practical courses in the Dispensary.

In the third year, Gross and Histological Pathology, Medicine, Surgery, Therapeutics, and the specialties of Obstetrics, Pediatrics and Neurology and Genito-Urinary Diseases are taken up. These subjects are completed in the fourth year, together with all the remaining specialties. The Faculty have insisted upon the importance of a certain number of didactic lectures in all of the main subjects to inform the students of the advancing general principles, and of the new theories and fallacies which are constantly brought forward. In connection with this it is interesting to note that of the 154 hours specially allotted to the general subject of Medicine in the third year, only eighteen are devoted to didactic lectures, the remainder are devoted to recitations, clinics, bedside and dispensary teaching. In the fourth year, with a nearly similar total number of hours for medicine, there are only ten didactic lectures. The other subjects divide their time in a corresponding proportion between didactic and clinical instruction.

New Site for the Manhattan Eye and Ear Hospital.—It was announced this week that the Manhattan Eye and Ear Hospital would move to a new site and erect a building capable of affording the greater facilities which are demanded by the institution's growth. The directors are planning to raise a fund of $200,000. The present hospital building occupies a plot 99 x 110 feet on Park avenue and Forty-first street, one block south of the Grand Central Station. This plot is now too valuable for hospital purposes, and the directors believe that by selling the property they would obtain enough capital to purchase a larger site, in a less valuable location, and to build a modern hospital of at least double the present capacity. The endowment fund of the hospital is now $171,000, but the directors say that they do not feel justified in proceeding to build without an additional sum of $200,000. One of the directors and his family offer a subscription of $50,000, conditional on $150,000 being raised by January 1, 1904. The great increase of eye diseases in New York, the closing of the throat department of one of the special hospitals, and the great growth in population, has widened the field of the Manhattan Eye and Ear Hospital. The hospital is now too small, every ward and room being overcrowded. It has been found necessary to provide the sitting rooms and playrooms with beds to accommodate the increasing demand. The basement, formerly the laundry, has been converted into clinic rooms. The number of operations in a year averages 1,200 on the ear, a like number on the throat and larynx, and 2,500 on the eye. In 1890 two wards were set aside for the treatment of contagious eye diseases, this being the first, in fact for many years the only, hospital in this city which provided such accommodations. Seventy-five per cent. of blindness is ascribed to contagious ophthalmia. The increase in the number of cases has been so large in recent years as to be regarded as almost epidemic in schools and factories. This affection is most prevalent among those who are unable to pay for hospital care and attendance, and nearly all require nursing day and night. Since its organization in May, 1869, 325,000 patients have been treated at the Manhattan Eye and Ear Hospital, the present average being 1,825, exclusive of outdoor cases to the average number of 20,000. In the course of the first year 1,717 new patients were treated, and the increase in new cases is shown in the following: 1877, 3,852; 1882, 5,666; 1887, 9,526; 1892, 14,123; 1897, 20,272; 1902, 23,078. The medical staff numbered 20 in 1877; it was increased to 86 in 1902. The hospital is supported by volunteer contributions wholly, and is intended for the free treatment of such persons as are too poor to pay for medical advice.

Manhattan Dermatological Society.—Regular monthly meeting was held March 6, 1903. Dr. L. Weiss, chairman.

Dr. I. P. Oberndorfer presented his case of milia and lichen to show the improvement of the former eruption, the result of treatment. This case was shown at the November meeting. At that time the eruption of milia was more abundant and well seen on neck and chest; the milia are much reduced in size and number and generally the condition improved. The lichen eruption now predominates and is present on neck, chest and some new lesions on left arm; patient was treated with Unna's ointment and Asiatic pills; patient began with $^1/_{100}$ grain arsenic, 1 pill, and gradually increased to 16 pills (or $^1/_6$ gr. arsenic) without physiological effect.

Dr. Abrahams recognizes the two lesions still present; the milia much improved; he advised further continuance of the line of treatment. Dr. Sobel thought the milia much improved; the lichen he believes remains unchanged; the best treatment for milia was undoubtedly the curette. Dr. Gottheil agreed with the former speakers; of significance was the production of a row of lichen papules following trauma (such as a pin scratch) upon an area of clear skin, in a patient affected with lichen planus; he asked whether the phenomena was observed by other members. Dr. Kinch asked whether the same result would follow the application of a mustard or other irritant plaster; also whether simple scratching, the result of itching, would produce the same effect; if so (in the latter case) it was reasonable to suppose that a new outbreak of lichen papules in such a patient, was preceded by pruritis, and the scratching was the irritant. To the latter question there was some difference of opinion: Dr. Ochs stated that the pruritis preceded the eruption and the irritation would produce mother lesions of lichen; this was invariably true of lichen; he did not observe it in psoriasis. Dr. Bleiman said that the phenomena may be observed in individual cases, but in general he regarded pruritis as secondary to eruptions. Dr. Cocks had his doubts on the question; a case of lichen recently observed, the pruritis apparently preceded the eruption. As to the eruption present, it was more typical of lichen than when first observed.

Dr. L. Weiss called it lichen obtuses, but not typical; some milia showed marked infiltration; he looked upon the latter as beginning fibromal cutis. As to Dr. Gottheil's statement it resembled the question of lues and irritation, and psoriasis and irritation; reasoning by analogy the same could be true of lichen.

Dr. W. S. Gottheil showed a male patient (Turk) with lesions of xanthoma tuberosum (non-diabetic) on extensor surfaces of both knees, the flexors of fingers, the back of both hands, and a few near elbows. Lesions present for some time. They were yellowish or orange-colored, quite hard and nodular; some lesions softer and pinkish in color. Urine does not show sugar.

Dr. E. L. Cocks stated that the hardness of the nodules did not exclude xanthoma tuberosum. Dr. Crary said many of the nodules looked like keloid to him; the hardness of these masses was not typical of xanthoma tuberosum. Dr. Oberndorfer called it xanthoma tuberosum; he thought many of the tumors were undergoing degeneration, hence the difference in consistency. Drs. Kinch and Sobel thought the nodules on fingers are rheumatic nodes; on knees and elbows agree to diagnosis of xanthoma tuberosum. Dr. Weiss does not hesitate to call it xanthoma tuberosum. Dr. Abrahams also accepts the diagnosis; the non-diabetic form was very rare.

The treatment of erysipelas was the subject for discussion by the members present.

PHILADELPHIA.

Philadelphia Hospital; Head Nurse Resigns.—Miss Marion A. Smith has resigned the position of Head Nurse and Directress of the Philadelphia Hospital Training School for Nurses to accept the superintendency of the University of Pennsylvania hospital. The resignation takes effect May 1. Miss Smith has held her present position since 1887.

Sudden Death of Dr. Carncross.—Dr. J. Augustus Carncross, house physician at the Friend's Asylum, in Frankford, died unexpectedly of heart trouble March 20. Dr. Carncross had been ailing, but was not confined to bed. He received the appointment of house physician seven years ago. Dr. Carncross was fifty-eight years old, and a native of Ohio. He was a graduate of Jefferson Medical College, class of '76, and a member of the Philadelphia Medical Society and the Philadelphia Medical Club.

Museum Jar with Improved Device for Sealing and Labeling.—At the Pathological Society March 12, Dr. W. M. L. Coplin exhibited and described a device for sealing museum jars that eliminates many of the disadvantages of older methods. The basis is the glass specimen box manufactured by Fettke and Ziegler of Germany. Difficulty has been found in maintaining a satisfactory seal with the ordinary materials used for that purpose. The lids may be attached by the use of paraffin or various cements, but experience with cements has not been satisfactory. With material that makes a tight joint there is difficulty in breaking the seal when the fluid in the jar becomes cloudy and requires changing. When the seal has been broken it is almost impossible to clean the jar and cover sufficiently to permit of resealing. With less efficient cements a water-tight joint cannot be secured. The device exhibited is a clamp consisting of two plates of lacquered brass, reinforced at the top with ribs to prevent bending, and joined by rods 0.5 cm. in diameter on the sides. Between the lower plate and the bottom of the jar is placed a rubber cushion, and at the top are two similar cushions, one between the glass lid and top of the jar, and one between the lid and the brass plate. The rods have milled heads and thumb screws by means of which the plates are approximated, thus securing a tight joint, and one that can be made or unmade in a moment. The brass plates are made rectangular in order that the jars may be placed on the side or edge as well as on end. Labeling is provided for by a clamp attached to the top plate of the jar. Into this cards similar to those in a card index may be inserted.

Heart Showing Chronic Tuberculosis of the Pericardium with Involvement of the Myocardium.—This specimen was shown by Dr. A. G. Ellis, having been obtained at autopsy upon the body of a male negro, aged twenty-four years. As tuberculous pericarditis is not a notably infrequent condition the specimen was presented because of the extent, rather than the nature of the lesion. The symptoms presented by the patient had been those of pulmonary tuberculosis of the left lung, these dating from an attack of pneumonia five months before, from which the patient never fully recovered, the succeeding symptoms being pain in the chest, cough, copious expectoration, night sweats and progressive weakness. Other than rapid action of the heart with weak pulse there were no cardiac symptoms, and the heart was not displaced. Autopsy showed the mediastinal tissues to be studded with variously sized grayish or yellowish nodules, some of which had caseous centers. The heart and the mediastinal tissues formed practically one large adherent nodular mass. Both pleura were universally adherent. In freeing adhesions upon the left side, the lung, which was markedly caseous and contained many cavities, was extensively torn. The pericardium is universally adherent, the external surface being studded with yellowish nodules varying from 0.2 to 2 cm. in diameter. In a number of places these nodules extend into the heart muscle, in some instances to a depth of more than a centimeter. The involvement of the heart is greatest in the left ventricle, but is quite extensive in the right. The liver, spleen, pancreas and kidneys contain miliary tubercles. Microscopical examination shows the adhesions uniting the two layers of the pericardium to be formed of granulation and fibrous tissues in which are disseminated areas of caseation. At many points the visceral pericardium has disappeared and the heart muscle shows invasions of lymphoid cells or even granulation and fibrous tissues. Sections from a dozen blocks have been examined, but in none of them have structures bearing any resemblance to an anatomical tubercle or a giant cell been found. A very few tubercle bacilli were found in one section.

The Lymphatic System and the Tonsil.—The Section on Otology and Laryngology of the College of Physicians was addressed at the meeting of March 18 by Dr. Henry L. Swain of New Haven, Conn., on "The Lymphatic System and the Tonsil." Dr. Swain began his address by relating in detail the history of a case that illustrated the reverse of the general statements made by writers regarding the effect of the tonsils on the lymphatic system. The patient was a man of 63 who, when first seen, had a moderate enlargement of the cervical lymph nodes. With this condition there was an enormous enlargement of both faucial tonsils and marked enlargement of the lingual tonsil. The tonsils were pale and showed no trace of inflammation, the condition being apparently that of simple hypertrophy. No pain was felt in these masses of tissue. The diagnosis of a constitutional condition affecting the tonsils was made, and treatment by Fowler's solution, etc., instituted. The tonsils soon markedly diminished, and the patient ceased coming for a time. When he reappeared the tonsils were again enlarged, but again responded to treatment, and the patient gained 28 pounds. The spleen was slightly enlarged at this time, and a history of axillary enlargement when the patient was twenty-five years old was obtained. A third time the man returned with enlarged lymph nodes in all parts of the body. The leucocytes were increased, but did not give the picture of lymphatic leucemia. Progressive weakness was followed by death. Examination of the tonsils and lymph nodes showed the enlargement to be due to simple hyperplasia. The case was evidently one of lymphadenoma, in which the general involvement had extended to the tonsils. It was detailed at length to emphasize the fact that the tonsils are not only lymphoid tissue, but are an integral part of the lymphatic system. In proof of this, Dr. Swain cited a case of a young man of twenty years, who, from an acute streptococcic tonsillitis developed acute Hodgkin's disease and died in six days. The function of the tonsils is the same as that of the other lymphatics, but in addition they absorb various materials that come in contact with them, because of their situation. Too many members of the profession have come to regard the tonsils as extra projections of tissue, to be removed under the least provocation. It should be remembered that when the tonsils are diseased a part of the lymphatic system is in an abnormal condition, and this means interference with what are perhaps the blood making or destroying organs of the body. Tonsillar infections become more widespread in children because the vessels are more widely open, as can be demonstrated by injecting them. The tonsils then are to be viewed not as irresponsible masses of tissue, but as doing much with the blood and lymph. A practical deduction is that free rein should not be given to their indiscriminate removal. When operation is performed it should be done thoroughly. Even then some of the tissue is left, and there is still a chance for infection. Removal does not give immunity, but only diminishes liability to infection.

CHICAGO.

Cleaning Sick-rooms.—The Department of Health advocates the vacuum method of cleaning sick-rooms, saying that "consumption, pneumonia, influenza, scarlet fever and similar diseases are known to be spread by infected dust of the sick-room, so the distinct and recognized purpose of the operation shall be to remove, and not simply to stir up the ever-gathering dust."

Prevalence of Scarlet Fever at Lake Forest.—Owing to the continuation of the epidemic of scarlet fever at Lake Forest, the University will be closed for two weeks. The quarantine on the University grounds has prevented an extension of the disease among the students, but it is spreading in the town. Most of the new cases have been in families where the disease already existed. No new case has occurred among the University students for about eight weeks.

Addition to Augustana Hospital.—An addition to this hospital will be erected this spring at a cost of $100,000. It will be fireproof, six stories high, and 110 by 130 feet.

Smallpox.—Seven new cases of this disease were reported during the week. Only one patient, an adult, had been vaccinated, and he in infancy. No case of $100,000. It will be fire-proof, six stories high, and 110 Chicago for years.

Illinois State Medical Society.—This Society will hold its annual meeting in this city, April 29 and 30, and May 1 and 2. The Committee of Arrangements is making every effort to secure a large attendance.

Clinics at all of the colleges and hospitals will be given for a week preceding the meeting. The Committee will send out twenty thousand copies of the preliminary program. A copy will be sent to every physician in the State of Illinois, and also to physicians of adjoining States.

A Method of Determining the Internal Dimensions, Configuration and Inclination of the Female Pelvis.—Dr. Hugo Ehrenfest, of St. Louis, Mo., read a paper, by invitation, before the Chicago Gynecological Society, on this subject. He demonstrated two instruments constructed by Dr. Julius Neumann and himself, called pelvigraph and kliseometer. The construction of the first mentioned instrument is based on the following principle: If a straight rigid rod is so moved within a plane, that in all points of its course it is kept parallel to its first arbitrarily chosen position, and, at the same time, one of its ends is permanently kept in touch with a given line, then necessarily its other end will create, if approximately equipped with a marked, an exact duplicate of said line. In this way it is possible to produce in a comparatively easy manner by means of the pelvigraph, an exact picture of a median vertical section through the pelvic canal in the living, or to measure the distance between any two points within the pelvic cavity. The speaker explained the manipulation of the instrument on a skeleton pelvis, and demonstrated a number of such diagrams taken from different patients with pelvic deformities. These diagrams showed the character of the deformity, and gave all the conjugates in actual size. Their value for scientific, and especially for teaching, purposes is obvious.

The second instrument, called kliseometer, is very simple in its construction. The author said that it is destined to directly measure the inclination of the external conjugate. The combined use of both instruments permits of determination of the inclination of the true conjugate in the living, a problem that as yet has been unsolved. By means of the kliseometer, the inclination of the conjugate at the obstetrical outlet is measured. The angle found is with a protractor transferred upon the diagram of the pelvis, and in this way an angle constructed, representing the real inclination of the pelvis. The speaker passes once more the diagrams of the different patients in which, by means of this construction, a line is found representing the horizon. If these pictures be so held that the said line parallels the horizon, a very instructive conception is gained as regards the position the pelves had in the upright women. These two instruments offer the possibility of graphically reproducing the form and exact dimensions of the most important sections through the pelvis, and of permitting measurement of its real inclination.

GENERAL.

School Inspectors in Strassburg.—Strassburg has appointed three school physicians. Each one has to guard the health of 2,000 children and his salary therefor is $250 a year.

The Sale of Poisons.—According to a letter in the Chicago *Daily News,* the laws regulating the sale of poisons are dead letter laws in Illinois and especially in Chicago. The State Board of Pharmacy must be derelict in its duties and lacking in sense of professional ethics, or it would make things exceedingly warm for the druggists who sell the means of suicide to any man, woman or child handing over the counter a dime or two. The druggist who is willing to retail opium, morphine, codeine, chloral, cocaine and other drugs equally destructive and deadly to anyone having the price is morally the murderer of a fellow human being—even if not legally so considered at present. It matters not whether this destruction is accomplished at once by the swallowing, for instance, of a sufficiency of carbolic acid, tincture of opium or any one of the alkaloids used by the public for self destruction, or whether life is destroyed gradually through the continued use of drugs in quantities smaller than the lethal doses.

"Is this community so commercialized, so bereft of conscience, that this sort of thing can continue indefinitely, continue with the legislature in session and the Board of Pharmacy able, if it so wills, to stop the infernal traffic? Look at the situation from another angle. There are comparatively few pharmacists who prostitute an ancient and honorable profession by selling these alkaloids to any one 'having the price.' The great majority refuse this 'trade,' and dispense the drugs only as directed by competent physicians for their legitimate uses. This is everybody's business. Many suicides are now committed with carbolic acid, an exceedingly painful death. For antiseptic purposes in the family the harmless boracic acid would do as well. Pure carbolic acid should not be sold at all over the counter. Take cocaine as an example. What earthly use can a private person have for this deadly drug, used almost exclusively for local anesthesia by physicians and dentists? What excuse can a pharmacist give in selling it as a powder in dime or quarter-size bottles? His only excuse would be that he needs the money. He needs a conscience more."

The Cause of the Sleeping Sickness.—According to Dr. Aldo Castellani, special commissioner sent out by the Royal Society, the sleeping sickness of Uganda and the related African regions is due to a special form of streptococcus that has a number of differential biological characters, separating it from the well-known pathogenic cocci. It occupies a position between the *S. pyogenes* and the *S. lanceolatus.*

Uses and Limitations of Hypnotic Suggestion.—Dr. William Lee Howard gave an interesting clinical lecture upon this subject to the Faculty and Senior Students of the College of Physicians and Surgeons, of Baltimore, on Monday last.

SPECIAL ARTICLE.

BYWAYS OF MEDICAL LITERATURE. XIII.

COMPARATIVE PATHOLOGY OF PLANTS.

At the recent meeting of the Medical Society of the State of New York at Albany, Dr. Harvey Gaylord of Buffalo described a special plant disease that causes tumors in trees and has many similarities with cancer in human beings. The etiological factor is a microscopic parasite called the *Plasmodiophora brassicæ.* The disease can be transferred from tree to tree by inoculation, and the tumors are caused by an overgrowth of the cells of the tree, each one of the cells containing a parasite. It is hoped that study of this will throw some light on the problem of the etiology of cancer, which, it is now frankly confessed, is as yet as far from solution as it ever was. In fact, one of the authorities, Prof. Lubarsch, stated not long ago that it is probable that other methods of investigation than those at present in vogue will have to be invented before definite information can be obtained with regard to the etiology of cancer. In the meantime it is perfectly clear that much light may be thrown on bacterial diseases in man by careful investigations in the comparative pathology of plants and the study of their parasitic diseases. After all it is perfectly clear that most of the parasites of man, even those of bacterial nature, pass a stage of their existence outside of the human body, or at least they exist for a long time without necessarily requiring to have human beings for their hosts. Just what this condition of extra vertebrate existence may be is not yet known, even for a single one of the bacteria. It is possible that some of the bacterial diseases of man may be represented by special pathological conditions in plants.

In the light of this it is interesting to find the review of the plant diseases that existed in this country during 1901, in the year book of the Department of Agriculture for that year, issued not long ago. There is scarcely one of the fruit or nut trees that did not suffer from some bacterial disease during the year. Many of the so-called blights that affect fruits, or such tubers as the potato, are really bacterial diseases. Among tomatoes last year, the bacterial wilt was troublesome all over the South, and especially in the Gulf States. A wilt disease of the tomato, whose parasitic cause has not yet been studied, raged in many of the Southwestern States and Territories, especially California, Arizona and Utah. There is a wilt disease of the watermelon that has been very prevalent in the South, and great losses were suffered, until many of the growers have had to adopt the advice of the Department of Agriculture not to grow watermelons twice on the same land. Another form of wilt disease nearly ruined the cabbage crop in certain parts of North Carolina and did great injury in Maryland.

Cotton also suffered from a form of wilt disease, which affects all the cotton-growing States and is as injurious to Sea Island as to upland cotton. Curiously enough, certain brands of cotton have been secured by selection that are very resistant to the disease, and these are now being planted generally in parts of the country that were liable to be affected especially by the wilt.

There is a special well-known form of bacterial blight that attacks edible nut trees, and that last year affected especially the walnuts in California. The Department of Agriculture has demonstrated that this disease can be partly controlled by spraying, but that the only means absolutely to eradicate it and to prevent future losses is by the selection and breeding of resistant varieties.

We are accustomed to think that at least the plants, if furnished with the proper amount of nutritious material in the soil and with favorable meteorologic conditions and reasonable protection, would grow healthily without more ado. As a matter of fact, however, all of them are liable to many diseases of different kinds. When plants fail it is often not because of weather conditions or lack of nutritive material, but because of the presence of parasites. The most important advances in recent agricultural science is the breeding of varieties of plants and fruits, resistant to the attacks of disease as well as to unfavorable weather conditions. It is well known that there are many plants which would survive unfavorable weather only that their lack of resistive vitality after exposure to it makes them more liable to the attack of various parasitical diseases that eventually cause their destruction. Once a parasitic plant disease has gained a hold, it acts as in the corresponding conditions in human beings, and takes on a virulence that enables it to affect even healthy plants.

MEDICINE AS A CAREER.

In a recent number of the New York *Sunday Tribune,* Dr. D. B. St. John Roosa discussed medicine as a career for the rising generation. He suggests that the two most important things for a young man who is about to enter on the study of medicine, are a good physical constitution and a high sense of honor. No boy should start out for preparation for the study of medicine unless he has a sound mind in a sound body and no physician can be entrusted with the sacred responsibility of the body of another human being, or with the personal history of his patients unless he has the qualities of reticence and a high sense of honor, added to a kindly and tactful disposition.

Dr. Roosa is of the opinion that most young men would find more lucrative occupations or professions than that of medicine, to which they would have to devote neither so much time in preparation, nor so much time and labor afterward in the practice of their profession. As to ultimate financial success he says: "It is very difficult to make comprehensive statements. The estimate as to what constitutes financial success varies very much in different places. A successful practitioner of medicine may be able in almost any community to have the comforts of life, so far as his time will allow him to enjoy them. In the legitimate practice of medicine, wealth is very rarely to be obtained, however, no matter how successful, or how high the rank of the man who pursues it. It is true there are exceptions, but a close study of these cases shows they are really exceptional, that is to say, we suppose that the men are geniuses of a high order, who would have made a wonderful success in any undertaking in life."

No man, Dr. Roosa thinks, should ever depend upon the practice of medicine with a view of acquiring a large fortune. Of course, there are some who from various causes, do not even acquire the competence necessary for the proper care of themselves and their families. These are the careless, the indolent, the tactless men, the men of bad habits and the men who ought not to have been in the profession. It must be admitted that there are some also who had not the means for the better preparation, or for whom the environment was too arduous.

> "Chill penury repressed their noble rage
> And froze the genial current of the soul."

He concludes with this paragraph: "But with all that may be truthfully said as to the severity of life in the medical profession, the occasional ingratitude of those who owe much to it, the inability to amass a great fortune, the want of appreciation by the general public of what it has already accomplished, there is no calling in which a well-prepared and competent man may have a more useful, or a happier life, whether in town or in the country."

ROYAL PHYSICIANS AND STRAIGHTFORWARDNESS.

The recently reported illness of the King of England recalls an experience of his with a consultant physician not long before Christmas. The consultant was Sir Richard Powell, who is well known for his bluntness, and who is said to owe not a little of his extensive practice to the fact that the aristocracy are perfectly sure that he will tell them exactly what is the matter with them without ado or tergiversation. His visit to his Majesty was typical of his ways in this matter. After asking his Majesty a few questions in regard to his general health, the doctor laconically ordered him to strip. The King pleasantly asked what portions of his clothing he should take off. On being told to strip to the waist he quietly did so.

The doctor then proceeded to examine him in the usual manner, utilizing the stethoscope and plexor and pleximeter for this purpose, until the King, who was not used to this vigorous sort of examination of all his organs, became anxious that it should conclude. Meanwhile Sir Francis Laking, physician-in-ordinary to the King, entered and watched the procedure.

When the practical baronet brusquely pronounced: "You have eaten too much; you have drunk too much;

I will send you a prescription to put you right," he departed with the scantiest ceremony. He had hardly reached the door when Sir Francis Laking, who was following him, overtook him and made a protest against his abruptness. The eminent specialist, who was apparently not in the best of humor, only retorted: "My dear Laking, if there is any squirming to do you must do it."

Dr. Laking returned to soothe his Majesty's ruffled feelings, and remarked by way of palliation: "Sir Richard is a very busy man just now." The King's reply, which typified the state of his mind, was: "Good God, Laking, I thought he was going to tattoo me."

A story of quite a similar order was told of the same physician not very long ago. It concerned the late Duchess of Manchester. Sir Richard met her by appointment at her house, and found her very handsomely dressed to receive him. After listening, with some impatience, to the rather lengthy tale of her woes, he said that the only way that he would be able to be certain that there was nothing serious the matter with her would be by carefully examining her heart and lungs, and he suggested that she disrobe. "But, Sir Richard," she said, "I haven't my maid here, in fact, I permitted her to go out some time ago." To this the Baron replied at once, "Madame, I have no intention of examining your maid. It is *your* chest that I wish to examine." It is not said what the Duchess thought, though, as she wanted Sir Richard Powell's advice, he had the opportunity to examine her chest before he left the house.

HELEN KELLER'S EXPERIENCES.

In one of the magazine numbers of the *Outlook*, a number of prominent literary men answer the question, Which are the ten books or parts of books in prose or verse most characteristic of American genius and life, which would not have been written on any but American soil. Among the ten books selected by Thomas Wentworth Higginson is Helen Keller's "The Story of My Life." This is the young woman already mentioned in this column, who, though congenitally blind, and deaf, and dumb, has succeeded in getting an education involving the highest culture, in acquiring several languages, in securing a degree at Radcliffe, and in general in developing her intellectual life to a very high degree.

Physicians often want literary encouragement for discouraged patients. There is nothing more stimulating than this story of the young woman who has succeeded against such seemingly insuperable difficulties in securing her education. As Thomas Wentworth Higginson says, "What heroine of romance has constructed for herself, aided only by one faithful companion, a career like that which Helen Keller has described as her own. Where else could or would that career have been so thoroughly worked out? It was Mark Twain, I think," he adds, "who said that the only absolutely interesting human beings produced during the last century, were Napoleon and Helen Keller."

FAINTNESS AT THE SIGHT OF BLOOD.

There is in a large number of people, by no means all of them being women, a very curiously interesting weakness that comes over them at the sight of blood. For some the merest tinge of blood, or the sight even of a fresh cut is enough to produce a condition bordering on collapse. There is a cold feeling at the pit of the stomach, a tendency to nausea that may even proceed to actual vomiting, if there is food on the stomach, and a pale, anxious face. This state of emotionalism is intensely discomforting to some of the sufferers, and many of them have tried all manner of means to overcome the habit of mind or nervous condition underlying it. A more successful method than any other that has been employed is said to be the constant presence of bright or blood-red roses in the living-room. At first the grouping of many of these causes some of the symptoms of the neurotic condition they are meant to overcome, but eventually, at least, a certain amount of tolerance of the sight of blood is acquired. Curiously enough the sight of blood, after a course of the rose treatment, is always apt to be associated with the odor of roses. The psychology of the therapeutic effect, and then of the odorous association is very interesting, though there seems no reason to doubt that there is something more in the whole proceeding than merely autosuggestion or the lessening of emotivity by frequent exposition to a factor of etiology. There is a nervous control acquired by habit that strengthens the inhibitory power.

CORRESPONDENCE.

TRANSACTIONS OF FOREIGN SOCIETIES.

British.

THE SEQUELÆ OF TYPHOID FEVER—DRAINAGE OF THE KNEE-JOINT IN ACUTE SUPPURATIVE ARTHRITIS—MICROSCOPICAL EXAMINATION OF THE DISCHARGE IN 100 CASES OF MIDDLE-EAR SUPPURATION.

S. TAYLOR, at the meeting of the West London Medico-Chirurgical Society, Feb. 6, 1903, opened a discussion on the Sequelæ of Enteric Fever and Their Treatment. He analyzed 56 cases of relapse, and pointed out that in many cases a change of diet, starchy food, or an enema or purge seemed to bring about the relapse, although in many cases no cause could be assigned. Under respiratory sequelæ, tuberculous disease was mentioned, latent trouble being frequently aroused to activity. Laryngitis with necrosis might occur, leading sometimes to emphysema of the neck and a condition resembling Ludwig's angina. As regards the circulatory system, thrombosis, nearly always of the lower limbs, was fairly common. The extent of thrombosis was often large, and the clot might extend into the vena cava. Dilatation of the heart, with valvular incompetence, was also a sequela. Nervous sequelæ are not uncommon, such as definite insanity or some moral obliquity. Aphasia might occur and also peripheral neuritis. Besides constipation and meteorism, peritonitis and perforation might be sequelæ, peritonitis being possibly started by bacilli in a gland or by infection from the appendix or from the gall-bladder. Perforation might be suspected, when with a falling temperature the pulse becomes rapid, associated with the characteristic facies. Sequelæ affecting the skin, cutaneous tissues, bones, were such as noma, gangrene and necrosis. These were not necessarily due to the intensity of the fever, but to the condition of the individual.

WILLIAM HUNTER took a wider view of the definition of sequelæ. He regarded them as complications which occurred apart from the ordinary course of typhoid fever and with causes different from typhoid fever. He analyzed the cause of death in 50 cases; 48 per cent. of the cases died from perforation, 20 per cent. from pneumonia, 8 per cent. from asthenia, and 6 per cent. from heart complications, including pulmonary thrombus and fatty heart. In 10 per cent. lung troubles other than pneumonia caused death, hemorrhage in 6 per cent., and erysipelas in 2 per cent. Dr. Hunter said that the mortality was greater formerly, probably in consequence of unsanitary conditions. These would account for the greater severity of epidemics in some German towns.

A. **Elliot** considered that from the military point of view the most important sequela of the epidemic in South Africa was disability, mental and physical. In the slighter cases, men were able to do light work at the base, but for a long time the hardship of trek was quite beyond their powers. In commissioned ranks the greatest stress was on the nervous system, producing slowness of cerebration and lack of decision, often rendering the patient unfit for responsible duty in the field. Of specific sequelæ the most common and perhaps the most important was phlebitis, variously estimated as occurring in from 56 to 25 per cent. of the cases. In epidemics in England and America the frequency was estimated at from 19 to 38 per cent. As regards the cause of the trouble the late Dr. J. W. Washbourne suggested that it was due to tinned food and want of fresh vegetables. But these led rather to scurvy and deficient coagulability of blood. Another suggestion was the wear and tear of marching. But an equal proportion of cases occurred in the cavalry and artillery. Dr. A. E. Wright found that the coagulability of the blood was increased during convalescence from typhoid fever. This, he thought, was due to an excess of lime salts from the exclusive milk diet. But in South Africa there was a notable lack of fresh milk. Probably all that could be said was that this sequela was due to bacterial invasion of the vein walls under conditions of lowered resistance. Embolism, although comparatively frequent in thrombosis associated with influenza and gout, was markedly absent in the thrombosis following typhoid fever. Bradycardia occurred in one case, but it might possibly have been due to an excess of digitalis. Tachycardia was a much more frequent and persistent trouble. As regards the alimentary system, hepatitis with enlargement of the liver without suppuration occurred in one case. There was jaundice in one case, associated with fatal pneumonia. Suppurative appendicitis closely followed enteric fever in one case. Probably it was due to an enteric ulcer in the appendix. Two cases of enteric fever immediately followed appendicitis. There was late perforation in one patient who had been on ordinary diet for a fortnight. A recent ulcer in the ileum was found to have given way. Two cases of parotitis occurred during convalescence. As regards dysentery, out of 13 cases occurring during the disease or convalescence, 6 proved fatal, while 6 patients who had dysentery before enteric fever all recovered. There were nine cases of joint affection, including six cases of arthralgia, two cases of arthritis with effusion and one case of purulent effusion.

H. L. **Barnard**, at the Clinical Society of London, Feb. 13, 1903, contributed a paper on the Drainage of the Knee-joint in Acute Suppurative Arthritis, illustrated by nine cases. He commenced by considering various operative procedures which had been adopted from time to time, such as those of the late Mr. Walter Rivington and Mr. Walter Whitehead. Mr. Barnard pointed out that few cavities of the body were so difficult to drain as the knee-joint. The usual method by lateral anterior incisions drained only the anterior half of the joint. The anatomy of the knee-joint showed two capacious pouches behind which reached above the condyles posteriorly, where they were covered by the heads of the gastrocnemius. They were separated from one another by a complete septum formed by the crucial and other ligaments. The external pouch sent a bursal extension down the leg along the tendon of the popliteus. When the knee-joint was extended, these two pouches were shut off from the front of the joint by the tight coaptation of the femur and tibia. When distended with pus they ruptured into the depths of the popliteal space, where the sepsis was liable to involve the vein. The abscess then tracked down the calf and up the thigh, making drainage of both tracks almost impossible. The pouches should be freely opened by two-inch incisions in the line of the leg made by cutting on the condyles where they could be felt projecting on either side of the popliteal space when the leg was fully extended. In order not to wound nerves, when the skin had been divided a blunt instrument should be used to scrape down to the capsule, which might then be freely divided with the knife. The knife was then flexed to relax the structures and tubes were inserted on each side. In eight of the nine cases treated by this method, the temperature fell to normal in from 36 hours to a week. Massage (downward in front and upward behind) greatly assisted the evacuation of pus from the deep pockets. The nine cases given in the paper were consecutive. The four traumatic cases gave the best results. Two had good movement, one had some movement, and one had fibrous ankylosis. The five cases of auto-infection were less satisfactory; two were amputated, one for feeble repair and persistent sinuses, in an old woman aged sixty-five years, and the other for a tuberculous cavity in the end of the femur infected with erysipelas. Two cases apparently due to leucorrhea were most unsatisfactory. It was claimed that the massage of posterior drainage would cope most successfully with the immediate dangers of sepsis. The final condition of the joint depended rather on the cause of the suppuration. Subacute cases of suppurative arthritis of the knee due to auto-infection should be treated by the usual lateral patellar incisions and irrigations.

Wyatt Wingrave, at the meeting of the Otological Society of the United Kingdom, held Feb. 2, read a report upon the Microscopical Examination of the Discharge in 100 Cases of Middle-Ear Suppuration, with an analysis of the results, having special reference to the presence of tubercle and "acid-fast" bacilli. He arrived at the following conclusions: (1) That acid- and alcohol-fast bacilli were demonstrable in a large proportion of chronic purulent ear discharges; (2) that in 17 cases they were presumably tubercle bacilli, in so far that they conformed to the recognized morphological and staining characters and were for the most part associated with trustworthy clinical evidence of tuberculosis; (3) that in seven (pseudo-tubercle bacilli) cases, while conforming to a greater or less degree to the staining requirements, they were morphologically unlike tubercle bacilli, yet five of them had either a family or personal history of phthisis; (4) that success in their demonstration in a great measure depended upon the methods of collecting and staining, together with perseverance in search, and (5) that in the peculiar selective action of the squames—a property specially attributed to certain bacilli, they had a possible source of error in diagnosis and an explanation of the peculiar affinity of other bacilli for fuchsin.

SOCIETY PROCEEDINGS.

NEW YORK NEUROLOGICAL SOCIETY.

Stated Meeting, held March 3, 1903.

The President, Pearce Bailey, M.D., in the Chair.

Tabes Associated with Hemiplegia.—Dr. Joseph Collins presented a man, forty-two years of age, a bartender by occupation. When twenty-four years old he had had a chancre, for which treatment was given. A year later an iritis developed, and disappeared after two months' treatment. There was nothing further until eight years ago, when he was seized with an attack of vertigo, which was associated with an aphasia lasting several days. There was no paralysis. Four yers later there was a similar attack associated with vomiting. Last August the man fell in an attack in which he was only partially unconscious. Examination showed a right-sided hemiplegia, and this had continued ever since. On coming to hospital, there was found in addition a very marked atrophy of the right shoulder, and an absence of both knee-jerks. The pupils were small and regular, and reacted to accommodation, but not to light. There were incontinence of urine and manifest ataxia. The case was presented as one of tabes, the latter probably antedating the attack of thrombosis from which the hemiplegia originated. Coincident with the attack of cerebral thrombosis there must have been an obliteration of one of the cornual branches of the anterior spinal artery. In reality, this case presented three conditions: tabes, cerebral thrombosis and a destructive poliomyelitis of very limited extent. Tabes and hemiplegia were rarely associated.

Dr. J. Ramsey Hunt said that he had examined this case in the City Hospital. He had been doubtful about its being an anterior horn disease, and inclined to the opinion that there was a plexus lesion.

Dr. M. G. Schlapp said that in some of these cases of hemiplegia certain groups of muscles were markedly atrophied. The electrical examination should decide whether the case was of central or peripheral origin.

Dr. J. Fraenkel said that in only a few of the cases of tabes with hemiplegia had the knee-jerk returned, and this had only been temporary.

Dr. C. L. Dana said that he had had a short time ago under observation a man with tabes whom he had seen the very day of the occurrence of the stroke. There had not been any return of the knee-jerk, and he thought this could only occur in the early stage.

Dr. Collins said that there had been no suspicion of the existence of tabes before he had examined this man, and he had been deeply interested in the presence of the marked muscular atrophy.

Major Hysteria (?).—Dr. Collins then presented a woman, forty-four years of age, a cook by occupation. There was no history of alcoholism or of venereal disease. The present trouble began four years ago, with an involuntary twitching of the hands, and a loss of sensation in the hands and arms. This loss of sensation had gradually spread over the entire body. She had no pain, but felt tired and walked with difficulty. The gait was not strictly ataxic, but was rather shuffling and choreic. There was a peculiar condition of the left lower extremity, the lower third being shrunken without any hardening or thickening of the skin. Examination showed universal analgesia and more or less thermal anesthesia and analgesia. The knee-jerks and ankle-jerks were exaggerated. There was slight disturbance of speech, but not of intellection. She presented none of the ordinary stigmata of hysteria, and the color fields were of normal size. The woman had not improved under hospital treatment. According to the history her father and sister were similarly affected, but the former lived to be over seventy years old. The case was presented without a positive diagnosis, because it did not seem to him to correspond either to hysteria, syringomyelia or Huntingdon's chorea.

Dr. Schlapp was of the opinion that the case was one of hysteria, because the condition did not correspond to any known pathological lesion. The condition of the leg might have been brought about by a self-inflicted trauma. Two years ago he had presented to the society a case of supposed atypical zoster, but subsequent investigation showed that the patient had produced the condition herself by means of carbolic acid.

Dr. R. H. Cunningham said he was reminded of a number of cases that he had had in a family in Richmond, Va., in 1893. Choreic symptoms developed between the ages of fifteen and thirty in the father, two sons and two daughters. One of the daughters had hemianesthesia. He would look upon the case just presented as one of adult chorea.

Dr. Collins said that he had been inclined to look upon the case as one of hysteria, yet this diagnosis presented many difficulties. After having observed her carefully for several months, he was still more inclined to the diagnosis of major hysteria.

Dr. Pearce Bailey said that he thought the ataxic gait was due to the anesthesia, and that the case was one of major hysteria. With regard to the other case, there seemed to be no doubt that the atrophy of the shoulder was distinct from the tabes. A fall on the point of the shoulder was quite frequently the cause of a paralysis with just such an atrophy.

Spinal Tumor.—Dr. M. G. Schlapp presented a man, forty-four years of age, with a good previous history. About two years ago a peculiar twitching had been noticed in the muscles over the right shoulder, and about two months later he had begun to suffer pain at the root of the neck, and extending into the trapezius muscle. After a time the right arm became weak, and subsequently the left side. This weakness was found to correspond to the muscles supplied by the anterior and posterior thoracic nerves on both sides. There was the Babinski symptom on both sides. There were analgesia and diminished temperature sense on the left side. The diagnosis made was an extramedullary tumor involving the fifth and sixth cervical roots of the spinal cord, pressing upon the pyramidal tracts and on Gowers' tracts, diminishing the pain sense and temperature sense. The tumor lay on the right side, and probably involved the motor roots on the other side. He thought an intramedullary tumor could be excluded. The man was to be operated on next week.

Dr. Pearce Bailey said he had seen this man last fall, and at that time there was no sensory disturbance, and the pain dated back two years, but with intermissions. He had formed the opinion then that there was a degenerative lesion rather than a tumor.

Cerebellar Tumor.—Dr. J. Ramsey Hunt reported a case of cerebellar tumor with degenerations of the posterior columns. The subject of this report was a man of forty-six, who had been admitted to Bellevue Hospital in July, 1902, with typical symptoms of cerebellar tumor, although the tumor could not be localized. The cerebellar symptoms had begun three months before, and he was under observation for three months. During these six months there was a progressive diminution of the knee-jerks and Achilles-jerks on both sides. It was thought to be due to degenerations in the posterior columns of the cord, as had been described in connection with tumors in the posterior fossa of the skull. There was very marked choked disk, and the man's mental condition became one of apathy and somnolence. At the autopsy two small tumors were found, one springing from the dura mater in the median line, and encroaching somewhat upon the right frontal lobe, and the other tumor in the left cerebellar hemisphere. Both tumors were medium-sized round-cell sarcomata. The spinal cord presented evidence of greatly increased intracranial pressure. Specimens of the spinal cord, both transverse and longitudinal, were prepared, and they apparently showed degenerations of the posterior columns, such as had been described in connection with tumor. The higher levels of the cord were most affected. Lissauer's column was spared, as was the rule. The fibers in Clark's columns were also usually spared. These degenerations arose from the entrance of the posterior roots into the spinal cord. It was an anatomical fact, that where the posterior roots perforated the dura mater obliquely there was a constriction, and that here the sheath of Schwann was lost. At the same time there was a constriction of the myelin substance, and some of the fibers were deprived entirely of this substance. The speaker then briefly discussed the mechanical and toxic theories, and said that he presented the case as one favoring the mechanical theory.

Dr. L. Pierce Clark reported the following case: The subject was a man of thirty, who had had both gonorrhea and syphilis, and who used alcohol and tobacco to excess. The present illness began in October, 1901, with headache in the right occipital region. After a time he began to vomit in the morning, and the right side became weak. Iodide of mercury had been given without benefit. On examination, there was choked disk in the right eye; the sixth nerve was bilaterally weak; the muscles of the right leg were stiff and painful; the head was held stiffly and bent slightly to the right side; all the deep reflexes were exaggerated, particularly on the right side; there was double Babinski; the gait was characteristically cerebellar. A diagnosis was made of a syphilitic tumor in the middle lobe of the cerebellum involving the peduncle. On admission to the Presbyterian Hospital in January, 1903, for operation, an X-ray examination showed the tumor. The man died rather suddenly, and the autopsy disclosed a tumor of the cerebellum. Between it and the fourth ventricle was a large cyst filled with slightly turbid serum. Apparently the growth was a syphilitic gumma that had undergone syphilitic and calcareous degeneration.

Spindle-cell Sarcoma of the Dura Cerebelli.—Dr. B. Onuf reported this case and presented a specimen. The subject of the report had been first seen on May 2, 1902, and at that time complained of a shooting pain in the left ear, and in the teeth, and of attacks of dizziness. There was only slight perception of light; the gait was staggering, there were no marked changes in sensation or in the reflexes; there was typical choked disk. A diagnosis of cerebellar tumor was made. Subsequently the man developed slight paresis of the left facial nerve with fibrillary twitchings of the muscles in this region, and the hearing on the left side became greatly impaired. In walking, the man deviated to the right. He died in December, and at the autopsy a tumor was found at the base of the left cerebellar hemisphere. It was a spindle-cell sarcoma. This could have been enucleated had it been in a more accessible situation.

Dr. Schlapp said that about a year ago he had presented to the New York Pathological Society a case similar to the one presented this evening by Dr. Hunt, showing degeneration of the spinal cord. The specimens from his case had been counterstained with acid rubin, and the sheath of Schwann was stained. In all of the cases the degeneration extended to this sheath, especially in the cranial nerves, the trigeminus, the glossopharyngeus, and the vagus nerves. He had expressed the opinion at that time that the sheath of Schwann might have some protective influence. He did not think the case tended to disprove the toxic theory. There were no sensory symptoms in the beginning, and probably the degeneration was at first confined to the fibers passing from the posterior columns into the gray matter. The poison appeared to be selective in its action, involving only the reflex fibers. The degeneration was particularly marked in the sensory nerves.

Dr. W. M. Leszynsky said that he had been interested in the fact that respiratory failure had preceded cardiac failure in Dr. Clark's case. One of his own patients had died upon the operating table just as a cerebellar abscess was reached. The heart continued to beat for eight or ten minutes after the failure of respiration. If degeneration existed in the posterior columns in the upper portions it must act chiefly on the third or fourth lumbar segments in order to produce loss of knee-jerks; how, then, would one explain those cases in which the knee-jerk was absent for a time, then became well marked, and was alternately present and absent?

Muscle Tonus and Tendon Phenomena; Their Relationship and Interpretation.—Drs. J. Fraenkel and Joseph Collins presented this paper, which was read by Dr. Fraenkel. It was based upon tonometric examinations of 230 patients. The authors stated that at the present day the view most generally held was that the tendon phenomena were expressions of muscle tonus. General clinical experience showed a definite relationship between tendon phenomena and the tonicity of muscles. Hypertonia, next to exaggeration of the tendon jerks, was a symptom of disease of the pyramidal tracts. The tonometer used in this investigation was the invention of the house physician of the Montefiore Hospital. A total of 554 registrations had been made. The 230 cases were distributed as follows: Apparently healthy, 32; cases of tabes, 25; of organic disease of the nervous system, 33; functional disease of the nervous system, 40; pulmonary disease, 70; heart disease, 12, and various other chronic affections, 18 cases. There were 71 registrations classed as hypertonia. It was found to be frequently, although not always, associated with exaggerated Achilles reflexes. Hypotonia was found to be frequently associated with loss or diminution of the tendon phenomena. There was a comparatively small number of neurogenic hypotonias in proportion to the cases of general hypotonia. Neurogenic hypotonia and absence of diminution of the tendon reflex were found frequently associated. Neurogenic hypotonia with exaggeration of the tendon reflexes was present in nine per cent. It was concluded that hypotonia produced by damage of the ascending tracts of the spinal cord was accompanied by loss or absence of the tendon phenomena in every instance. In the cases of hypertonia absent or diminished reflexes were present in six per cent. of the registrations. In the cerebral group there was found a larger percentage of hypotonias than of hypertonias. In the spinal group 100 per cent. gave exaggerated tendon reflex, and 95 per cent. showed hypertonia. It had been learned that whenever the neurogenic tone was markedly increased or decreased the tendon-jerks were increased or decreased correspondingly. The authors concluded that disease of the posterior tracts caused hypotonia, and disease of the pyramidal tracts caused hypertonia. There was a large group of cases giving normal tonicity and normal tendon phenomena.

Dr. G. L. Walton, of Boston, said that in the exhaustive discussion on reflexes and tonus opened by Crocq in 1901, the reader had reviewed the clinical and experimental evidence which tended to show that the reflexes generally corresponded to the tonicity. The exceptions to this rule he explained as illustrations of the fact that the centers for tonicity (at the cortex) and those for the deep reflexes (in the basilar region) were separate. This explanation was not directly discussed, though the limitation of these functions to the regions indicated was seriously questioned. The readers to-night had reinforced in a most convincing way the results of Crocq, though their explanation of the exceptional cases differed from his materially. The question was too complicated to be discussed in its entirety, especially in the absence of exact knowledge as to the seat of either the tonus or the reflexes, but such work as had been reported this evening furnished one of the definite steps by which one might gradually mount to a knowledge of this complex subject. We had been so long imbued with the notion that in man, as in the frog, the spinal cord was the centre for reflexes and tonus, that it was difficult to transfer our study of these functions to the brain. Even in case of disturbed reflex in cerebral disease we were still apt to think of the function of the brain as limited to the withdrawal, or the increase of influence upon the cord, through the pyramidal tract. For a long time the hypotonicity and loss of reflex sometimes found at the onset of cerebral hemorrhage was attributed to the shock conveyed to the cord. At the discussion already alluded to the disputants, while recognizing the importance of the cerebral influence, were by no means in accord with Crocq in limiting the reflex centers and the centers of tonicity to the brain. Dr. Walton said he had several times taken occasion to suggest that, instead of speaking of lower centers controlled, or inhibited, by higher centers, inhibited perhaps in their turn by still higher centers, we should recognize the combined action of all centers, cortical, basal and spinal, allotting to certain regions a predominating reflex function, liable to transference to a lower level on gradual withdrawal of upper level influence. According to this view each reflex movement might be regarded as a resultant of the activity of various loops of different lengths, connected with each other both laterally and vertically. The more he had observed the reflexes in cerebral disease the more he was inclined to accord the cortex the predominant rôle in the deep, as well as the superficial reflexes, and in the tonus. It was difficult, for example, to explain on any other basis the absence of deep and superficial reflexes in the following case: The patient was unconscious and hemiplegic. with a temperature of 105° F., and all reflexes absent up to the time of his death. The Kernig symptom was present, showing, probably, comparative hypertonicity of the hamstrings, but the extremities were otherwise obviously hypotonic. Autopsy showed pneumococcus meningitis of the convexity with encephalitic invasion of the cortex. In other cases of meningitis the reflexes were frequently preserved, but in one case of meningitis coming under his observation, in which both brain and cord were affected, during the stage of rigidity and obvious hypertonicity the reflexes were absent, but reappeared as relaxation set in, first on the side first relaxed. One must evidently look farther than to separation of the centers to explain such conflicting phenomena; in fact, different cases might require different explanations. Possibly it was partly a question of comparative tonicity. In the last case, for example, the hamstrings might have possessed hypertonicity so far in excess of the hypertonicity of the quadriceps femoris as to "snub" the knee-jerk. In long standing infantile cerebral hemiplegia with contracture the deep reflexes were often absent, though hypertonicity was apparent. Doubtless in some of these cases the contracture was in such position as to put the tendons on too great or too little stretch, thus mechanically preventing the reflex. The combination of exaggerated reflexes with hypotonicity was sometimes seen in Erb's syphilis of the cord, especially in the early stages. In a recent conversation with Dr. Courtney he had suggested that the affection about the fibers of the pyramidal tract was sufficient to impede the transmission of voluntary impulse and of tonicity from the cortex, but the reflex stimulus passed the more rapidly, as in neurasthenia, uninhibited by the volitional mechanism. Though not sure that he had thoroughly grasped the explanation of the readers on this point, Dr. Walton felt that they had proceeded along logical lines.

Dr. C. L. Dana thought the authors had established quite clearly the relations of hypertonia to the reflexes, and had given to the neurological world tangible working data. He had not fully understood the explanation of the effect of the brain on hypotonus and hypertonus. Personally, he made use of a working hypothesis which fitted in very well with the explanation given in this paper. In all the sudden insults to the brain occasioned by hemorrhages producing profound hemiplegia there was always absence of the deep reflexes on the paralyzed side, and with it no doubt hypotonia; whereas there was not this loss of reflexes on the non-paralyzed side. After a time this absence gave place to an increase of reflex. If, however, the hemorrhages were more posterior and involved the sensory sphere, there was more definite and more prolonged absence of reflexes.

Dr. B. Onuf referred to a case in which a tumor of the hip and shoulder centers was diagnosed, and the tumor removed, with the result that a very marked hypotonia developed in the paralyzed extremity after the operation, and was present even two months afterward.

Dr. Collins said that Dr. Fraenkel was satisfied with having established the relationship between tonus and reflexes, and they were both particularly gratified with Dr. Dana's statement that in his cases of cerebral hemiplegia he had observed that the farther posteriorly the lesion extended, either into the sensory cortex or the sensory representation of the capsule, so in proportion was the existence of hypertonia or the lateness with which it appeared. This clinical experience fortified very greatly the position taken in the paper.

Dr. Fraenkel said that he, too, had been delighted at the confirmation of their position by the very large clinical experience of Dr. Dana. If their observations were correct they should be of value in connection with diagnosis of pure lesions of the pyramidal tract associated with hypertonia and of the posterior tract with hypotonia.

HARVARD MEDICAL SOCIETY OF NEW YORK CITY.

Stated Meeting, held Saturday, January 24, 1903.

Leucocytosis.—Dr. Carleton B. Flint found by careful examination of a series of cases under treatment at a city dispensary for various minor surgical conditions that out of fifty cases in which leucocytosis was found, five were under ten years of age, fourteen were between ten and twenty and thirty-one were above twenty years of age. Other things being equal, the younger the patient the greater the tendency to an increased number of the leucocytes, during an infectious process and the higher the leucocytosis itself. A child and an adult admitted with the same surgical condition would differ in the leucocytosis, almost inevitably the child having the higher count. The region affected by the infectious process seemed not to make any material difference in the leucocytosis occasioned. The number of glands involved did, however, seem to make a difference in the number of leucocytes found. Most of the patients had enlarged glands. Where the leucocytosis was high a number of glands were almost sure to be found enlarged and somewhat tender. Some cases, occurred, however, in which in spite of the presence of a considerable leucocytosis no glands seemed to be involved. Where glands were involved and not tender, the numbers affected seemed to make no difference, for there was an average leucocytosis is of about the same amount. In about ten of the cases only a little pus was present, in nineteen about a dram was found, in twenty-two there was an ounce or more of pus. The average leucocytosis was about the same, no matter what the quantity of pus present. It was evidently the quality of the microbic infection, rather than the amount of destruction of leucocytes to make pus that caused the leucocytosis. In seven cases there was no pus present, yet there was a distinct leucocytosis. In four cases of cellulitis, the leucocytosis ranged from 20 to 30,000, yet no pus was found and it seems evident that the leucocytosis is a sign of infection rather than of pus formation.

Meat Infections.—Three of the cases in which there was leucocytosis without pus formation, were due to meat infections. That is they occurred in butchers, cooks and waiters in whom the handling of meat gives occasion for infection by micro-organisms that grow parasitically in slaughtered animals. The affections produced were erysipeloid in character and were really examples of the so-called Rosenbach's disease. There was always a leucocytosis in these cases, though the leucocyte count was low, but no pus was found.

Duration of Leucocytosis.—The limit assumed beyond which the patient was presumed to have a leucocytosis was 8,000. Whenever patient's blood examination showed a leucocyte count below this figure, the leucocytosis was considered to be at an end. In 29 cases the leucocytosis fell below this figure within a week. The average leucocyte count in these cases of such short duration was 12,000. Twelve cases dropped below 8,000 in leucocyte count and therefore became normal during the second week of observation. The average leucocyte count in these cases was 15,000. Nine cases became normal only after the end of the second week and in these the leucocyte count as a rule was very high at the beginning. In six cases the leucocytosis continued very high, that is nearly 30,000 for over three days. In children that are under the age of ten years, the average duration of a leucocytosis was about ten days. In adults between twenty and thirty years of age, the average duration was sixty days. In older patients the leucocytosis lasted less than this as a rule. Children seem to react as regards leucocytosis much more rapidly and more markedly to the infectious agents present and it is longer before there is a definite return to the normal. As patients are older, the duration of the leucocytosis becomes constantly less. There are exceptions to this rule dependent somewhat on the severity of the affection, but in any case, adults seem to react less readily in the production of the leucocytosis and return to the normal much sooner than younger children.

Packing of Abscesses.—Dr. Edward Foote called attention to a remark of Dr. Flint's with regard to an increase of leucocytosis when abscesses were packed so as to prevent free drainage of purulent secretion. The expression, "packing an abscess" is a bad one and the expression, drainage of an abscess, should be substituted for it. Undoubtedly some physicans are led to put more gauze into abscess cavities than is necessary in order to secure drainage as the result of having the idea expressed by packing an abscess before their minds. Dr. Foote asked whether it can be considered patients are doing well after certain surgical procedures if there is a drop in the leucocyte count.

In answer to this question Dr. Flint said that leucocytosis means not pus, but infection. Its presence is an index of resistive vitality. When the leucocytosis drops there is no longer any spreading of the infecton, or absorption to any extent of infectious material. unless as sometimes happens there has been a complete change for the worse and an entire loss of resistive vitality.

Glandular Enlargements and Streptococcus Infections.—Dr. Charles Schramm said that it is interesting to note the highest leucocyte counts were found when granular enlargements were frequent and a streptococcus infection at work. There is material in this series of studies for the investigation of the question as to whether, as has been stated by some physiologists, the leucocytes are due to activity on the part of the lymphatic glands or as they are more modernly called, the lymphatic nodes.

Pelvic Abscess and Leucocytosis.—Dr. Henry Coe said that pelvic abscess may now practically be considered as coming under the designation of minor surgery. It is not an unusual thing to find in cases of pelvic abscess that the leucocytosis so commonly present drops immediately after the evacuation of the abscess. In a case recently seen at the New York Memorial Hospital, the patient on admission had a leucocyte count of 50,000. The pulse was 140, the temperature 103° F. and there was an obscure history that looked somewhat like criminal abortion. A careful vaginal examination showed that there was a pelvic abscess of considerable size which was already beginning to point in the posterior vaginal fornix. It was opened and a pint of infected pus with broken down blood material was removed, evidently due to an infected hematocele. The leucocytosis dropped at once to 20,000. The abscess cavity was packed and the packing seems to have interfered with drainage for there was an almost immediate rise both in the temperature and the number of leucocytes once more. As soon as the packing was removed the temperature and leucocytosis dropped again. In Dr. Coe's experience, it is a rare thing to have a patient suffering from a gynecological condition come under treatment with a leucocytosis of from twelve to fifteen thousand without finding pus present in the pelvis.

Leucocytosis and Vital Resistance.—Dr. Daniels said that according to Dr. Flint's observations, leucocytosis seems to be highest when resistance is least. In children it is easy to produce a rise in the leucocyte count and it takes a considerable period before there is a reaction to normal. Dr. Daniels called attention to the fact that there is a leucocytosis reported as constantly present in the later stage of labor. The leucocyte count is increased if labor is prolonged. In these cases, however, there is no pus present and no germs are active. It would seem then that a reduction in vitality itself or the strain of the exhausting process of labor may without further cause suffice to produce an increase in the number of leucocytes.

Susceptibility and Resistive Vitality.—Dr. George Brewer said that the high leucocytosis in children, instead of being an index of lower resistive vitality is really a sign of the promptness with which nature reacts for the protection of the child against the entrance of infectious organisms. It is a common experience that children have as a rule excellent resistive vitality. They are especially susceptible to disease, but this has nothing to do with their resistance to it. It is well known that many of the children's diseases, so called, run a much more severe course when they occur in adults than they do even in very young children.

Dr. Foote said that children are certainly not lacking in resistance to disease and if, as embryologists teach, death begins from the moment when the cell begins its process of division in the embryo until the final term of existence, it is to be expected that children should be more vitally resistive than older persons. As a matter of fact it is generally conceded by surgeons that children stand surgical intervention of various kinds much better than adults and that their resistive vitality will prove surprising in its reactionary resources even in apparently delicate subjects and what look like hopeless circumstances.

Normal Number of Leucocytes.—Dr. Spooner said that one of the difficulties with regard to observations on leucocytosis is the assumption of the normal number of leucocytes. Dr. Cabot of Boston declares that under normal conditions the number of leucocytes present, may be from 3,000 to 12,000. The normal differs in different individuals. A man who has normally only slightly more than 3,000 leucocytes must be considered to have a distinct leucocytosis when there are 6,000 present. On the other hand when the individual number is 6,000 or slightly more, then a true leucocytosis is present only when there are 10,000 to 12,000 white blood cells to the cubic millimeter.

Removal of Lymph Glands.—Dr. Oastler said that the question of leucocytosis would seem to throw some light on the serious problem as to whether lymph grands should be removed in order to limit further constitutional infection. When there is extensive suppuration in the hand and enlargement of the lymph nodes in the axilla, some surgeons consider that the axilla should always be cleaned out. Other surgeons deny the advisability of this because it does very little, if any good, during the present infecton and if another infection should occur, it removes the gland sieves which act as protectors of the system against the entrance of infectious materials, from the limbs into the trunk. According to Dr. Flint's observation, it would seem to be almost a matter of indifference whether the lymph glands are removed or not. As their removal is always a serious operation, this would seem distinctly to discourage such surgical intervention.

In closing the discussion, Dr. Flint said that some of his cases, in which there was no pus, but a very acute infection, had the highest leucocytosis. The leucocyte count cannot then be used as an index of the absence or presence of pus with any degree of certainty.

Conservative Surgery and Its Dangers in Gynecology.—Dr. Henry Coe said that he considers it is time to begin to admonish conservative surgeons in gynecology to be conservative in their conservative methods. He has seen some very unfavorable results after so-called conservative surgery and considers that the chances of future difficulties should be well weighed before the surgeon decides on preserving tissues that may already be either infected or in a very low stage of resistive vitality. It is well understood among gynecologists that part of the ovary is allowed to remain rather for the sake of the sexual life, than because of the possibility of pregnancy, the presence of even a small amount of ovarian tissue secures the woman from many very annoying symptoms. Gynecologists are very prone to make much of the good results of conservative work, but fail to report the unfavorable consequences. Dr. Coe considers that certain of the unfavorable cases are extremely instructive. In a case recently under his observation for the second time he had to remove the right tube and ovary and the appendix two years ago. The left tube and ovary, apparently in reasonably healthy condition were allowed to remain. Some weeks ago the patient returned, having suffered from severe pain, gradually growing worse, practically ever since her convalescence from the last operation. Now the pain was all referred to the left side of the pelvis and on examination a cystic mass could be felt in the vagina on the left side. At operation this proved to be an inflammatory condition of the left ovary, which had to be removed. Perhaps there has been in the meantime a secondary infection. However, this woman would have saved two years of pain, and the necessity for a second operation, if the total ablation of her tubes and ovaries had been done at the first operation. In another case recently under observation the right ovary had been removed and as there was tilting backward of the uterus, a Kelly suspension was done. The long adhesions that are expected to form in these cases were found to be present and were so situated as to be very favorable for the development of occlusion af the intestine or disturbance of its lumen by catching knuckles on it. In the left tube and ovary a blooming pyosalpinx was found. This was undoubtedly due to secondary infection, that is, infection since the previous operation, but it must be borne in mind that where women have once become infected with gonorrhea, it is not at all improbable that subsequent infection will also take place, and this possiblity must be borne in mind and must form one motive in guiding the surgeon as to the extent to which conservatism may be practised.

Formation of Adhesions.—In a third case under Dr. Coe's observation, after an operation for the removal of portions of the left ovary most extensive adhesions were found. These undoubtedly prevented anything like the proper functioning of the ovary and must have been besides a source of great pain and discomfort. Dr. Coe has seen at least a dozen cases in which conservative surgery has been followed by atrophy of all the ovarian tissue left and consequently with total failure of the ovary to prevent the sexual symptoms and premature menopause for which the portion of ovarian tissue was left. Gynecologists insist on the possibility of pregnancy in these cases. But this is a very rare occurrence and comes more by good fortune than good judgment. There are perhaps half a dozen cases of pregnancy altogether in the literature after conservative surgery, involving portions of both ovaries.

Papilloma of Bladder.—Dr. Daniels said that a man of about forty years came to him a year ago last October with a story of having passed a few drops of blood from his penis. He seemed to be in perfectly good health, more anxious than ill and, as the incident did not occur again, for a considerable period, he ceased to worry. Some months ago he came back with a story of having passed blood again and a cystoscopic examination, showed the presence of a papillomatous growth of the bladder. Dr. Daniels asked if he should advise his patient to have the growth removed because of the danger of malignant degeneration, or whether he should wait until there were some surer signs of cancer about the case, since it is well-known that papillomata may exist even for a year without producing serious symptoms.

Uncertainty of Vesical Papillomata.—Dr. Coley said in answer to Dr. Daniels' question that if papillomata of the bladder are cancerous they are usually very malignant and run a rather rapid course. In one case that has been under observation, a papilloma of the bladder was removed by a suprapubic operation and was followed by the development of epithelioma in the scar of the abdominal wall. Dr. Brewer said that he has known a case of papilloma of the bladder which has remained innocent for ten years. Keyes of New York has reported a case that has not become malignant, though it has been present for eighteen years. As a rule, if there are long villi, and this can be judged at the cystoscopic examination, the tumor is innocent. Of course, cancerous degeneration may take place at any time so that the advice to give a patient in any one case is extremely difficult to decide.

Sessile and Pedunculated Tumors.—Dr. Ramon Guiteras said that tumors with a broad base, the so-called sessile tumors of the bladder are much more apt to be malignant, or to degenerate malignantly, than are those that have a pedicle. Dr. Daniels said in answer to a question that the tumor in his case seemed to have a rather broad base.

Dr. Dawbarn said the age of the patient rather than the kind of tumor is important. If the patient is about forty-five years old or older, then it is usually malignant, since this is the age when neoplastic formations in the body are apt to get beyond the control of the vital forces of the organism. If the tumors develop in younger patients they are usually innocent and remain so, though of course it must not be forgotten that malignant tumors sometimes occur in young persons, and when they do they run an extremely rapid course.

Dr. Coley said that the younger the patient the less chance by operation if malignancy is present. Undoubtedly it is true that cancer is occurring at earlier years than used to be thought and in any particular case, the age of the patient can scarcely be considered as a diagnostic factor excluding the presence of cancer.

Some Tumors Comparatively Innocuous.—Dr. Follen Cabot said that he has had under observation a patient who is in his sixtieth year and who is conscious of having had a papillomatous tumor of his bladder for 23 years. The development of cachexia and other signs seemed to point to malignant degeneration and the tumor was removed. It recurred, however, and the recurrence was complicated by tremendous hemorrhages. In a patient of thirty years of age who had suffered for some thirteen months from papillomatous growth of the bladder and in whom the principal symptoms were violent hemorrhages, the introduction of adrenalin, in the strength of 1-5,000 controlled the bleeding better than any other method of treatment.

Frequent Palliative Operation.—Dr. Spooner gave some details of a case that had been under observation in the Massachusetts General Hospital. This had remained non-malignant for 25 years. When first seen the man was already over fifty and he turned up at the hospital every two or three years to have portions of the tumor scraped out, because it was interfering with urination. Notwithstanding this frequent irritation, the patient has lived for many years and has enjoyed comparatively good health.

NEW YORK ACADEMY OF MEDICINE.

SECTION ON GENITO-URINARY SURGERY.

Stated Meeting, held March 18, 1903.

Dr. John Van der Poel, in the Chair.

A Self-Retaining Double Retractor, for Supra-Pubic Cystotomy.—Dr. John Van der Poel presented this instrument, which was a modification of that of Dr. Legue of Paris, used in abdominal operations. The blades of the present instrument, 2½ cm. in depth, although they acted well in a case of suprapubic cystotomy for stone, where the abdominal walls were thin, and where the instrument served its purpose well, were found too short in a case where the walls were thick, and considerable fat was present. As they were interchangeable, however, it was an easy matter to substitute others of greater depth, or of any depth, sufficient to engage the bladder walls, and hold them apart, securing a good field of vision in the interior of that organ. The length of the blades was 4 cm.

Cystectomy for Extrophy of the Bladder.—Dr. Frank Hartley read this paper. (Will be published in a subsequent issue of MEDICAL NEWS.)

Dr. J. F. Erdmann said that he was particularly interested in the subject of removal of the bladder in cases of extrophy. A year and a half ago he had a case of extrophy in a child six months old, in which he did the Maydl operation. At that time he met with no difficulty in separating the bladder, as was experienced by Dr. Hartley. He dissected out the bladder, first having introduced probes in the orifices of the ureters, meeting with absolutely no difficulty in the operation. He trimmed away all of the bladder except that region in which the orifices of the ureters were found. This area was about the size of a ten-cent piece. This was inserted into the sigmoid after the manner of Maydl. The wound was sewed up tightly; patient reacted perfectly after the operation. For the first two days the rectum was catheterized q. 4 h., an ample quantity of urine being removed at each catheterization. No evidence of kidney or skin infection being present up to the time of the child's death, which occurred on the sixth or seventh day from a bilobar pneumonia. There were no evidences of any secondary infection at the site of the wound or kidneys. During the first two days the patient's rectum was catheterized every four hours, and the kidneys were found to be working properly. After this time the child would expel its urinary collection in the rectum voluntarily.

Cystectomy for Tuberculosis of the Bladder.—Dr. Frank Hartley read this paper. He believed that, in cases of extrophy of the bladder, almost all plastic operations for their relief, or attempts to form a new bladder with continence almost always failed. He had never had but one continent bladder which held the urine for 1¾ to two hours. The cases so far reported had not been thoroughly substantiated, one only having been seen years after operation by Tietze. For this reason he thought it wise to attempt some other method, unless the local deformity was slight and gave promise of results. With a mortality of 15 per cent. he thought the operation as performed by Maydl, or some modification of it (Pozzi's), the best so far proposed. The Frank operation has not been tried enough in man to thoroughly substantiate its value, although on dogs it had worked nicely. As a last resort one could attempt a uretero-urethral implantation in the male (Sonnenburg), or a ureterovaginal in the female (Pawlet). It is interesting to note also that in operations for extrophy by the Maydl method 8½ of the 15 per cent. mortality was due to shock and 6½ per cent. to infection of the ureters and kidney. The question as to how much ureteritis existed before operation in these cases has never been settled. He said also that cystectomy for tuberculosis of the bladder was extremely rare, especially for cases such as the one presented, where the ureteral orifices were not involved in ulceration, and the tuberculous involvement of the bladder was in all probability primary in the bladder.

Report of a Case of Mucous Cyst of the Anterior Wall of the Bladder, Simulating Stone, or Pedunculated Tumor.—Dr. Willy Meyer presented this patient, a man, forty-one years old, married, the father of four children. In early youth he masturbated for quite a while. Later he suffered from spermatorrhea. Dr. Meyer saw him in March, 1892, when the patient stated that he had, for four months, trouble with normal urination, having had pain toward its end, some tenesmus and frequent irritation, and he noticed the stream was cut off, as in cases of stone. There was no bloody urine. The urine was clear. He passed water four times during the day and two or three times at night. He generally experienced a sharp pain in the glans penis and, when urinating, the flow would stop, then continue, then stop, then continue, etc., until he was through. A large sound could be introduced which gave him some relief. In Philadelphia X-ray pictures were taken to learn if there was a stone in the ureter or bladder; nothing was found. It was interesting to note that the patient insisted that the taking of the X-ray picture gave him relief for a number of days. Both prostatic lobes seemed to be somewhat enlarged. The catheter would not pass into the bladder. The prism at the neck of the bladder revealed a transparent growth which appeared to be the size of a cherry. The blood vessels were enlarged over it, and a very pretty picture was shown. The growth was over the internal orifice, and was not entirely illuminated. The growth was round, smooth and sessile, covered by blood-vessels. On account of its being diaphanous it was diagnosed as a cyst. Inasmuch as Dr. Bangs had reported a hydatid of prostate he thought of that condition being present in the bladder. The patient suffered very much. He was sure that the growth was not a malignant one because of the picture. On March 11 he did a suprapubic cystotomy and found, on the anterior wall of the bladder, a tumor, which was transparent, oval in shape, and with its long diameter placed transversely. With the use of the Paquelin cautery he was able to shell the growth out completely and control the hemorrhage. Unfortunately he ruptured the cyst. The microscopical examination was made by Dr. Ware, and revealed a mucous cyst line by epithelium. The patient made a good recovery and is now well. He stated that these cysts of the bladder were very rare, although there have been some reported, and they were considered to present cystic degeneration of the mucous glands. One case had been reported in which the cyst filled the entire bladder, containing a number of quarts of fluid. This certainly was considered to be a very unique case. He said that dermoids and hydatids also were extremely rare in the bladder.

Suprapubic Cystotomy for Tuberculosis of the Bladder, Followed by Nephrectomy.—Dr. Willy Meyer reported this case. The patient came to him on account of frequent urination and purulent urine. He gave a tuberculous history. The tubercle bacilli were found. The bladder contained 15 or 20 c.c. of fluid. The cystoscope failed to tell whether the mouth of the ureter was healthy or not. He believed that, in the great majority of the cases, a cystoscopic examination would show whether the tuberculosis was descending or ascending. Personally he had never seen a case of ascending tuberculosis when there was an ulceration around the mouth of the ureter; if it was a descending tuberculosis he expected to find tuberculous ulceration about the mouth of the ureter. This was the rule almost without exception. He, therefore, wished to cystoscope the patient first to learn whether it was an ascending or descending infection, and to determine whether or not to do a nephrectomy. In these cases he always hesitated in opening the bladder unless it was absolutely deemed necessary. Of course, if the disease was far advanced one must do it. If there was a beginning tuberculosis, the removal of the kidney might suffice to create a secondary tuberculosis of the bladder. He opened the bladder and learned that both mouths of the ureters were absolutely healthy. Upon a most careful examination, care being taken not to infect the patient, he noticed a sudden gush of pus from one of the ureters. He found numerous small ulcerations, but not around the mouth of the ureter. He thought best to drain the other kidney and, therefore, he introduced a catheter into the opposite ureter, and left it in place for twenty-four hours; the urine from this kidney showed healthy urine. Ten days later he extirpated the diseased kidney, and an ascending typical tuberculosis was found. The patient made a good recovery and had improved very much in health since. An obstinate suprapubic fistula remained which he had been unable to close. The patient was much annoyed by this small sinus, but he hesitated to open the bladder to repair it.

Dr. A. V. Moschcowitz said that apropos of the case reported by Dr. Meyer he believed it would be of interest to mention a peculiar case which he had had occasion to see three months ago. The patient was a woman, twenty-eight years old. Her parents had died of tuberculosis, also one brother, while another brother was affected with pulmonary phthisis. She had complained for a year and a half of frequent micturition, at night getting up six or seven times and, during the day, urinating every half hour. Last October he saw the patient. She had purulent urine. Making a very careful examination he found the tubercle bacilli; this examination was repeated on various occasions, and the tubercle bacilli found each time. Cystoscopic examination showed the right ureter to be distinctly ulcerated, with two ulcerations at the mouth of the ureter. The physical examination showed an enlarged right kidney, freely movable. He kept the patient under observation for some time. She did not improve under any local treatment, and he felt justified in opening the right kidney. He exposed the right kidney and found it enlarged, with an adherent capsule, but nothing else. He bisected the kidney from one pole to the other and found nothing. Under these circumstances he did not feel justified in removing the kidney. The kidney was anchored and the patient placed in bed. Recovery was uneventful. Since then the ulcerations in the bladder healed completely, and the tubercle bacilli have also disappeared from the urine. The patient is perfectly well, urinating on an average only four times in twenty-four hours.

Suprapubic Cystotomy for Tumor of the Bladder, with Spinal Anesthesia.—Dr. Willy Meyer presented this patient, who had already been shown two years ago before this Section. The patient then was sixty-six years old and had symptoms of tumor, with repeated hematuria for four years previous. He first passed clear urine and then bloody. Upon the left side of the fundus, above and behind the left ureteral opening, there was noted a small tumor about the size of a hazelnut, which had a broad base, and small spurtings of blood was seen. Operation was performed March 9, 1901, under spinal anesthesia, because the man had a very pronounced bronchitis. One-third of a grain of cocaine was used with perfect result, so far as analgesia was concerned. There was no difficulty in shelling out the tumor, using the Paquelin cautery, and the bladder was inverted. After the bladder wound was closed with sutures, except a small opening, the bladder wall was inverted and the bladder anchored. The patient made a good recovery. The wound was water-tight. The tube was removed on the eighth day and, three or four days later, the wound was closed. This patient was shown by Dr. Meyer because, at that time, there was a suspicion of cancer entertained. The patient now was entirely well. He had no more hematuria, and was passing water four times during the day, and not at all during the night.

Dr. John Van der Poel had had a similar case, in a man, sixty-nine years old, who presented symptoms typical of a bladder tumor; *i.e.*, the hemorrhage, though practically constant at the time he was first seen, excepting after the bladder was washed out, when it was controlled for a short time, originally came on only at the end of micturition, (which was more frequent than normal, and bright red in character). A cystoscopic examination was made, and a well marked villous tumor easily seen at the mouth of the right ureter, apparently about the size of an English walnut, with its fimbriæ movable, appearing as if they were floating in the fluid contained in the bladder. A photograph of the mass was subsequently taken, though not entirely satisfactory, on account of the fluid becoming turbid too rapidly. Suprapubic cystotomy was performed, the transverse incision being used, as a good field was desired, this incision allowing a better view of the interior of the bladder than the longitudinal one. Although the incision was a low one, one cm. above the symphysis pubis, the peritoneal cavity was opened, the fold of peritoneum (although the bladder contained 250 grams of fluid), reaching down to the symphysis. This was sutured, with no following complications. The tumor was removed with the Paquelin cautery without difficulty, but was extremely friable, and between the fingers had no resistance, feeling very much as one would suppose a jellyfish to be.

Pathological examination showed the mass to be a pure papilloma. The subsequent course was normal and a cystoscopic examination made three months after the operation showed absolutely nothing, excepting a slight mark at the previous seat of the pedicle (which had been not over an eighth of an inch in diameter). The transverse incision in the bladder wall had healed perfectly, and there was nothing but a slight scar to be seen in that region.

Suprapubic Cystotomy for Stone, with Spinal Anesthesia.—Dr. Willy Meyer presented a patient, sixty years old, who came under his care two years ago with symptoms of prostatic enlargement and stone, with the stone symptoms predominating. There was but little residual urine. He proposed to crush the stone, and the patient was operated upon in the hospital on March 10, 1901. Spinal anesthesia was obtained by tropacocaine. Shortly before this he had had a patient who had a very large gland; when the lithotribe was introduced the end of it could be felt beneath the skin in the neighborhood of the umbilicus. One thought that the urethra had been perforated, and that the instrument evidently could not be in the bladder. The stone was evacuated and, to make sure that there was no such opening in the bladder, he explored it and found none. In this case Dr. Meyer also felt the instrument directly under the skin. Having had this experience in the other case he wished to make sure of its position, so he did not attempt to do a litholapaxy, but incised the bladder and carefully searched for any perforation either in the urethra or the bladder, and found no such opening. He removed the stone and treated the bladder by inversion. He was glad he did not crush the stone, for it was such a beautiful specimen. If the lithotribe should be felt beneath the skin one should not think that there was any perforation of the bladder.

A Contribution to the Pathology and Prognosis of Diseases of the Bladder.—By Dr. Robert Holmes Greene and Dr. Harlow Brooks. (Will be published in a subsequent issue of Medical News.)

Dr. Frederic Bierhoff said he was very much interested in this paper because it had been his privilege to examine a great number of bladders with the cystoscope, and he found that the necropsical findings agreed perfectly with the conditions determined by examinations of the living. There was one class of the cases mentioned that was particularly interesting because little had been said of them in medical literature, a class referred to in the paper as "prostatics without prostates." He had found a number of cases of this class to be primarily due to tabes. Those cases had also been referred to by Von Frankl Hochwart and Zuckerkandl. They made a careful examination of a large number of tabetic patients, recording the muscular power, capacity, etc., of the bladders. They came across a number of cases in which there was a spasmodic obstruction in the deeper urethra. He said that he believed that, as a result of this tonic spasm, it was possible for a true hypertrophy of the bladder to result.

He had published a case, in 1899, in which there was a true muscular hypertrophy with distinct diverticula in the female. This patient had a marked cystitis, and she was examined because of that. She had, also, a marked tabes. Examination by the cystoscope showed an exquisitely pronounced vesical hypertrophy with well-defined diverticula. It could only be assumed that the cause, as given by Von Frankl Hochwart and Zuckerkandl was a tonic spasm of the deep urethral muscles. Upon careful examination it was found that the insertion of any instrument revealed a pronounced spasm in the deeper urethra, and that cocainizing the part relieved it entirely. When once the instrument passed that point the bladder emptied itself beautifully. The largest sized instruments, also, could be passed. The woman never emptied her bladder completely. The doctor said he had met the same condition in the male, where there was absolutely no prostatic hypertrophy, or organic stricture, yet there had been from 450 to 750 c.c. residual urine; there had been found a distinct hypertrophy of the muscular coat. He said that these cases were of great importance because they were often incorrectly diagnosticated, or not recognized. These patients come to me on account of frequent micturition, or else because of a cystitis that is difficult of cure. These cases should be regularly catheterized in the early stages with the greatest care regarding asepsis.

BOOK REVIEWS.

The Practical Treatment of Stammering and Stuttering, with Suggestions for Practice and Helpful Exercises. By George Andrew Lewis, and a treatise on the Cultivation of the Voice, by George B. Hynson, M.A. George Andrew Lewis, Detroit.

Few of the minor ailments can give so much inconvenience and be the cause of so much discomfort as stammering and stuttering. It has been recognized now for many years that the speech defects can be remedied to a very large extent by means of proper training undertaken in early years, before the habit has become inveterate. The fact that tabetics can be taught to walk again is the best illustration of how much can be done for nervous defects by properly directed training, even when they are dependent on serious degenerative changes. The uncertainty of the action of the tabetic compares somewhat with the stammerer, yet it can be greatly improved by the Fraenkel method of training the muscles once more. This book gives a very good idea of the practical treatment of these speech defects and supplies practical therapeutic suggestions of great value. The writers have evidently studied their subjects from the clinical standpoint and what they have to say is well worthy of attention. The consideration of such defects as distinctly pathological rather than merely the result of bad habit will set the treatment of these affections on a more satisfactory plane than heretofore, when they have often fallen into the hands of those whose only object was exploitation of the unfortunate stutterer.

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